COMPLETION REPORT

Davie Landfill Superfund Site
4001 S.W. 142nd Avenue
Davie, Florida

Prepared For:

United States Environmental Protection Agency
Region IV
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BROWARD COUNTY
FLORIDA

Office of Integrated Waste Management-Solid Waste Operations Division

ABBREVIATED TERMS

Abbreviated terms contained in this report are defined where they first appear in the report text and defined below for reference.

AOC	Administrative Order by Consent
ARARs	Applicable or Relevant and Appropriate Requirements
CDM	Camp Dresser & McKee, Inc.
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
EPA	United States Environmental Protection Agency
FDEP	Florida Department of Environmental Protection
FS	Feasibility Study
MCL	Maximum Contaminant Limit
NCP	National Contingency Plan
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
O & M	Operations and Maintenance
OU	Operable Unit
RA	Remedial Action
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
UAO	Unilateral Administrative Order
µg/l	Microgram Per Liter

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EXECUTIVE SUMMARY

The Broward County Office of Integrated Waste Management-Solid Waste Operations Division (OIWM-SWOD) has prepared this Completion Report to initiate the site deletion process from the National Priorities List (NPL) for the Davie Landfill ("site"). The site is located at 4001 S.W. 142nd Avenue, Davie, Broward County, Florida. The site was placed on the NPL in September 1983 due to concerns relating to a former on-site sludge lagoon. The site, owned by Broward County, Florida, operated as a landfill from 1964 to 1987.

The site is a 209-acre parcel of land that includes a 48-acre Class I landfill (north mound), a 68-acre Class III landfill (south mound) and a nature pond (former sludge lagoon). Three borrow pit lakes are located on the eastern and southern portions of the site. These borrow pits are approximately 25 feet in depth and were used as a source of limestone for landfill operations and cover material. A portion of the site (approximately 160 acres) was converted to a Broward County regional park, known as Vista View Park, which opened to the public on July 12, 2003.

Operations commenced at the site in 1964 with the opening of a trash landfill (south mound) that accepted trash and ash from Broward County's garbage incinerator situated on the eastern portion of the site. In November 1971, an unlined sludge lagoon was created in an on-site natural depression to receive grease trap waste, septic tank waste and treated municipal wastewater plant sludges. In June 1975, the incinerator was closed due to particulate matter emissions failing to meet new air regulations, and a sanitary landfill (north mound) was opened to the north of the existing trash landfill to accept garbage. By 1981, groundwater contamination concerns led Broward County to terminate all disposal operations at the sludge lagoon. The landfill accepted its last waste material in December 1987 and official landfill closure was attained from the Florida Department of Environmental Protection (FDEP) on February 7, 1995.

A Record of Decision (ROD) relating to contamination associated with the sludge lagoon (referred to as Operable Unit 1 or OU1) was issued by the United States Environmental Protection Agency (EPA) on September 27, 1985. As a result, Broward County developed a closure plan for the sludge lagoon and the landfill. The ROD authorized Broward County to initiate the design of a remedy for the source control of contaminants in the sludge lagoon. The remedial action selected by the EPA included:

- Dewatering and stabilization of the sludge lagoon contents;
- Placement of the stabilized sludge into Cell No. 14, located in the sanitary landfill (north mound); and,
- Installation of a low-permeability cap on Cell No. 14.

The remedial activities associated with the 1985 ROD were completed in July 1989. The activities addressed only source control (removal of the sludge materials). The decision on whether additional action would be necessary to address groundwater contamination was reserved until an evaluation on the effects of the remediation of the sludge lagoon was completed and further assessment data from continued monitoring was acquired. EPA defined Operable Unit 2 (OU2) as the evaluation that would be required to identify any additional hot spots at the site and any necessary remediation.

In 1992, the EPA and Broward County entered into an Administrative Order by Consent (AOC), which required the completion of the Remedial Investigation/Feasibility Study (RI/FS) process consistent with CERCLA and the National Contingency Plan (NCP).

A Remedial Investigation (RI) Report was completed by Camp Dresser & McKee, Inc. (CDM) in October 1993. The results of the RI showed that the remediation of the sludge lagoon in 1989 was effective in reducing contamination at the site. The results of the RI showed that the groundwater, surface water, sediment, and soils at and in the vicinity of the site contained, with few exceptions, minimal to non-detectable levels of contaminants.

A Baseline Risk Assessment Report was prepared by Roy F. Weston, Inc. in December 1993 on behalf of EPA. The risk assessment addressed risk to human health and environment at the site. The risk assessment determined that the only receptor and pathway of concern at the site was the future resident, via groundwater ingestion.

A Feasibility Study (FS) was conducted by CDM in conjunction with the RI. The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The groundwater constituents detected during the completion of the RI that exceeded their respective remediation goals were antimony, manganese, and vinyl chloride. However, based on a comprehensive evaluation of the groundwater analytical results, it was concluded that the presence of antimony and vinyl chloride were the most likely potential site-related contaminants. Based on the results of the FS (completed in April 1994), the EPA selected a proposed remedy that included EPA oversight of the existing engineering, institutional and regulatory controls to ensure that they were operating as expected.

In August 1994, a ROD to present the selected remedial action was issued. The function of this remedy was to reduce the risks associated with exposure to contaminated groundwater. The major components of the selected remedy were as follows:

- Natural attenuation of vinyl chloride and antimony;
- Groundwater monitoring to confirm natural attenuation;
- Monitoring of residential wells to determine the impact upon such private wells; and,
- Connection to public water supply for residents that had been affected by contamination in excess of the established Performance Standards.

The engineering/institutional/regulatory controls required to be accomplished per the selected remedy included landfill capping, stormwater management, leachate management, landfill gas management, groundwater/landfill gas emissions/surface water monitoring, extension of public water supply lines, deed restrictions for the site, and FDEP regulatory control.

Based on the ROD of 1994, a Unilateral Administrative Order (UAO) was issued by the EPA, which directed Broward County to perform the Remedial Design/Remedial Action (RD/RA) described in the ROD. The purpose for the RD/RA was to monitor the performance of the selected remedy (natural attenuation) and to design and construct public water supply extensions, if necessary. Public water supply lines were extended to residences affected by groundwater contamination in 1988 and 1994. Additional information relative to the site conditions is provided in the Five-Year Review Reports prepared by EPA in 1994 and 2000. These reports concluded that the selected remedy remained protective of human health and the environment.

According to the 1994 ROD, when the groundwater cleanup goals (Performance Standards) had been reached for a period of one year, the site could be considered for deletion from the NPL. Based on the groundwater analytical results over the last seven semiannual sampling events (September 2000 through September 2003), the concentrations of vinyl chloride and antimony have been shown to be below the established Performance Standards of 1 microgram per liter (µg/l) and 6 µg/l, respectively.

The Performance Standards for the selected remedy established in the 1994 ROD have been achieved for the site. The groundwater data confirms the effectiveness of the selected remedy.

The information provided in this report demonstrates that the cleanup activities were successfully implemented, the Performance Standards have been met for a period of three years, the remedy is operational and functional, engineering/institutional/regulatory controls are in place, are effective and will continue to be diligently maintained, all remedial activities are complete, and the remedy continues to be protective of human health and the environment. Broward County has met or exceeded all of the regulatory requirements of the 1994 ROD; therefore, **we respectfully request that the EPA pursue the process of deleting the site from the NPL.**

1.0 INTRODUCTION

The Broward County Office of Integrated Waste Management-Solid Waste Operations Division (OIWM-SWOD) has prepared this Completion Report to initiate the site deletion process from the National Priorities List (NPL) for the Davie Landfill ("site"). The site is located at 4001 S.W. 142nd Avenue, Davie, Broward County, Florida. The site was placed on the NPL in September 1983 due to concerns relating to a former on-site sludge lagoon. The site, owned by Broward County, Florida, operated as a landfill from 1964 to 1987. A Site and Vicinity Map is provided in Appendix A.

A Record of Decision (ROD) was issued by the United States Environmental Protection Agency (EPA) on September 27, 1985, and required Broward County to remediate the on-site sludge lagoon. A second and final ROD was issued by the EPA on August 11, 1994. It addressed groundwater contamination at the site and called for the implementation of response measures that would protect human health and the environment. The selected groundwater contamination remedy relied on natural attenuation (degradation) of the contaminants of concern - namely vinyl chloride and antimony. A groundwater monitoring program was implemented to ensure that natural attenuation was effective.

This report includes general background information, a summary of pertinent site investigations/remedial actions conducted, and recent operations/monitoring information that demonstrate that the Performance Standards for the selected remedy established in the 1994 ROD have been achieved for the site. Additional information relative to the site conditions is provided in the Five-Year Review Reports prepared by EPA in 1994 and 2000. These reports concluded that the selected remedy remained protective of human health and the environment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site and Vicinity Characteristics

The site is located approximately 900 feet northwest of the intersection of Orange Drive and N.W. 142nd Avenue in Davie, Broward County, Florida, and is located within Section 27, Township 50 South, and Range 40 East. The site is bordered to the north by a Boy Scouts of America campsite. Residential properties (Imagination Farms and Riverstone) border the site to the east and west. Undeveloped land and a telemetry tower owned by the South Florida Water Management District border the site to the south. The surrounding area is primarily residential, with some commercial uses.

The site is a 209-acre parcel of land that includes a 48-acre Class I landfill (north mound), a 68-acre Class III landfill (south mound) and a nature pond (former sludge lagoon). The north mound rises to an elevation of approximately 80 feet above National Geodetic Vertical Datum (NGVD). The south mound rises to an elevation of approximately 65 feet NGVD. Three borrow pit lakes are located on the eastern and southern portions of the site. These borrow pits are approximately 25 feet in depth and were used as a source of limestone for landfill operations and cover material. A portion of the site (approximately 160 acres) was converted to a Broward County regional park, known as Vista View Park, which opened to the public on July 12, 2003. A 2002 aerial photograph depicting the on-site features is provided in Appendix B.

The site is situated between two major drainage canals - the North New River Canal (approximately three-and-a-half miles to the north) and the South New River Canal or C-11 canal (approximately ¼-mile to the south). To the east of the site is a north-south drainage ditch that discharges into the South New River Canal.

2.2 History of Site Use

Operations commenced at the site in 1964 with the opening of a trash landfill (south mound) that accepted trash and ash from Broward County's garbage incinerator situated on the eastern portion of the site. In November 1971, an unlined sludge lagoon was created in an on-site natural depression to receive grease trap waste, septic tank waste and treated municipal wastewater plant sludges. In June 1975, the incinerator was closed due to particulate matter emissions failing to meet new air regulations, and a sanitary landfill (north mound) was opened to the north of the existing trash landfill to accept garbage. By 1981, groundwater contamination concerns led Broward County to terminate all disposal operations at the sludge lagoon. The landfill accepted its last waste material in December 1987 and official landfill closure was attained from the Florida Department of Environmental Protection (FDEP) on February 7, 1995. Assorted aerial photographs (years 1965, 1973, 1975, 1977, 1984, 1990 and 1995) and a Chronology of Events, which summarizes the significant site activities, regulatory rulings and technical reports, are provided in Appendix C.

2.3 Summary of Site Investigations and Remedial Actions

Since the initiation of a groundwater monitoring program in 1974, numerous studies have been conducted at the site. In November 1981, the EPA designated the site as a Hazardous Waste Site under the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA), also known as "Superfund." In August 1982, the EPA initiated sampling of the sludge lagoon and found high levels of total cyanides and total sulfides. Subsequent sampling showed reduced concentrations of these contaminants, which eliminated the hazardous waste classification of the materials in the sludge lagoon. Nevertheless, the site was officially placed on the NPL as a "Superfund" site in September 1983 due to concerns relating to the sludge lagoon.

2.3.1 Summary of Operable Unit 1 Activities and Associated ROD

A ROD relating to the sludge lagoon (referred to as Operable Unit 1 or OU1) was issued by the EPA on September 27, 1985. The EPA decision to issue the ROD was based on concerns that arose from groundwater sampling data collected during the 1970s through the mid-1980s and a surface resistivity survey (geophysical investigation) in 1981. The results of the resistivity survey indicated that a leachate plume existed beneath the site and that the plume was moving in the general direction of the groundwater flow - south-southeast. The survey results also revealed that the sanitary landfill and the trash landfill were contributing to the contamination; however, their contribution to area contamination was masked by the effect of the sludge lagoon. As a result, Broward County developed a closure plan for the sludge lagoon and the landfill. The ROD authorized Broward County to initiate the design of a remedy for the source control of contaminants in the sludge lagoon.

Highlights of Community Involvement

On August 15, 1985, a fact sheet was submitted to the Broward County Public Library Government Documents Section, Fort Lauderdale, Florida, which detailed remedial alternatives for the Davie Landfill site. A public meeting was held on August 29, 1985 to discuss the sludge lagoon closure plan at the Broward County Public Library Auditorium, Fort Lauderdale, Florida. This meeting was attended by EPA and Florida Department of Environmental Regulation (FDER) representatives, Broward County representatives and their consultants, media representatives and private citizens.

After a period for public comment, a remedial action was selected by the EPA, which included:

- Dewatering and stabilization of the sludge lagoon contents;
- Placement of the stabilized sludge into Cell No. 14, located in the sanitary landfill (north mound); and,
- Installation of a low-permeability cap on Cell No. 14.

On June 30, 1988, a Cooperative Agreement, Assistance ID No. V 004599-88-1 was awarded to the Broward County Board of County Commissioners for partial funding of the remediation of the sludge lagoon portion of the site. Pursuant to the ROD and the Cooperative Agreement, Broward County performed the remediation of the sludge lagoon, which was completed in July 1989. As stated in the Sludge Lagoon Cleanup-Final Remedial Construction Report (Post, Buckley, Schuh & Jernigan – December 1989), the following is a summary of the sludge lagoon remedial activities.

Excavation, Dewatering, Stabilization and Disposal of Sludge

The excavation, dewatering and stabilization of the lagoon sludge began on April 15, 1989. Dry and wet sludge materials were mixed to create a uniform mixture for stabilization. Type I Portland cement was then added to the mixture, as necessary, to stabilize the material and to remove any remaining free moisture. The stabilized material was loaded onto dump trucks and hauled to Cell No. 14 of the sanitary landfill for disposal. A total of 82,158 cubic yards of sludge was excavated, stabilized and disposed. Sludge was also encountered and removed from the eastern slope of the trash landfill and the dike areas and concrete off-loading ramp associated with the sludge lagoon. Sludge removal and stabilization activities were completed in May 1989.

Excavation of Unsuitable Material

Excavation of unsuitable material around the sludge lagoon was performed concurrently with the sludge excavation activities. These materials included trash, construction materials and other debris used in the construction of the dike surrounding the sludge lagoon. A total of 57,626 cubic yards of unsuitable material was excavated from the area. These materials were disposed of in either Cell No. 14 of the sanitary landfill or the trash landfill, as required. Excavation of the unsuitable material was completed in July 1989.

Soil Sampling/Analysis and Foundation Material Excavation

As part of the 1985 ROD, residual soil cleanup goals were established for lead, chromium, cadmium, arsenic and mercury. In May 1989, thirty-nine (39) foundation material samples

from seven (7) sampling sites were obtained and submitted for analysis to determine the effectiveness of the sludge lagoon cleanup activities. The results of the analysis indicated that all but two sample locations revealed concentrations below the soil cleanup goals. The two said sample locations revealed marginal exceedances of the soil cleanup goals for arsenic. The areas surrounding these sampling locations were further excavated. Surface scraping of the lagoon area was performed along with the excavation of the foundation materials. A total of 23,400 cubic yards of material was excavated and disposed of in Cell No. 14 of the sanitary landfill. These activities were completed in June 1989.

Final Grading of Sludge Lagoon and Nature Pond Area Construction

Final grading of the sludge lagoon occurred in July 1989. This activity included the creation of a water channel connecting the newly excavated nature pond (former sludge lagoon) and Borrow Pit No. 2. The nature pond was created during the excavation and removal of the foundation material. Additional excavation was completed along the pond's edge to meet the grades of the final site plan.

Based on the satisfactory analytical results of composite surface water samples collected from the newly constructed nature pond, excavation of the connecting channel between the new nature pond and Borrow Pit No. 2 was completed in July 1989.

Final Cover Construction

Construction of the final cover for Cell No. 14 of the sanitary landfill began on July 25, 1989 and was completed on August 8, 1989. A total of 31,969 tons of limerock were used as landfill cover material, and approximately 21,000 tons of the total were used for Cell No. 14. Two lifts of material, 1-foot thick, were spread and compacted to an in-place density of at least 98%. The final cover was sloped at a 2% grade towards the southwest corner of the sanitary landfill.

2.3.2 Summary of Operable Unit 2 Activities and Associated ROD

The 1985 ROD addressed only source control (removal of the sludge materials). The decision on whether additional action would be necessary to address groundwater contamination was reserved until an evaluation on the effects of the remediation of the sludge lagoon was completed and further assessment data from continued monitoring was acquired. EPA defined Operable Unit 2 (OU2) as the evaluation that would be required to identify any additional hot spots at the site and any necessary remediation.

In 1992, the EPA and Broward County entered into an Administrative Order by Consent (AOC), which required the completion of the Remedial Investigation/Feasibility Study (RI/FS) process consistent with CERCLA and the National Contingency Plan (NCP). The purpose of the RI/FS process was to gather enough information about the site to support an informed risk management decision regarding which remedy, if any, appearing to be most appropriate for the site. The Remedial Investigation (RI) and Feasibility Study (FS) were conducted concurrently. Data collected in the RI influenced the development of remedial alternatives in the FS, which in turn affected the data needs and scope of treatability studies and additional field investigations. This phased approach encouraged the continual scoping of the site characterization effort, which minimized the collection of unnecessary data and maximized data quality.

The RI, prepared by Camp Dresser & McKee, Inc. (CDM), was completed in October 1993. The RI's purpose was to detail investigative and analytical activities in an effort to document the nature and extent of contamination at the site; to present data to aid the EPA in the assessment of current and potential risk to public health, welfare, and the environment; and to assess the contribution of contamination from off-site sources. The work included additional groundwater assessment activities and collection/analysis of soils, sediments and surface water samples to identify potential sources of contamination.

The results of the RI showed that the remediation of the sludge lagoon in 1989 was effective in reducing contamination at the site. The results of the RI showed that the groundwater, surface water, sediment, and soils at and in the vicinity of the site contained, with few exceptions, minimal to non-detectable levels of contaminants.

As stated in the RI, vinyl chloride had previously been detected (1988) in several private wells south of the site and the C-11 canal. The RI revealed that in 1993, vinyl chloride was not detected in any of the 16 private well samples collected in that area. Vinyl chloride was detected in only five groundwater monitoring well samples at concentrations slightly above the 1 microgram per liter (µg/l) Maximum Contaminant Limit (MCL) established by the Florida Primary Drinking Water Standards. Several metals were detected above their respective MCLs, but the presence of metals was sporadic and did not indicate a trend of metal contamination.

A Baseline Risk Assessment Report was prepared by Roy F. Weston, Inc. in December 1993, under contract to the EPA. The risk assessment was developed to identify the existing or potential risks that may be posed to human health and environment by the site. As stated in the Baseline Risk Assessment Report, the nature and extent of the human health and ecological risks, for both present and future use of the site, were evaluated due to the release, or potential release, of contaminants from the site. The risk assessment determined that the only receptor and pathway of concern at the site was the future resident via groundwater ingestion. The risk assessment identified the chemicals of concern at the site as antimony, arsenic, beryllium, chloroform, chromium, 1,4-dichlorobenzene, manganese, and vinyl chloride, as determined by the concentration-toxicity screening, frequency of detection, and contribution to overall risk.

The FS, prepared by CDM, was finalized in April 1994. The FS is the mechanism for the development, screening, and detailed evaluation of remedial action alternatives. As stated in the FS, general remedial action objectives developed for the site were based on protection of human health and the environment, EPA guidance, and state and local regulations through compliance with Applicable or Relevant and Appropriate Requirements (ARARs). The remedial action objectives specifically developed for the groundwater at the site were as follows:

- To meet ARARs for the site or, where ARARs do not exist, prevent ingestion of contaminated groundwater which exceeds a cancer risk of 10^{-4} or a non-cancer hazard quotient of 1; and,

- Control future releases of contaminants to ensure protection of human health and the environment.

The remediation goals were selected by using the most conservative value of the state and federal standards, since these ARARs take precedence over the risk-based values. The groundwater constituents detected during the completion of the RI that exceeded their respective remediation goals were antimony, manganese, and vinyl chloride. However, based on a comprehensive evaluation of the groundwater analytical results, it was concluded that the presence of antimony and vinyl chloride were the most likely potential site-related contaminants.

Applicable remedial technologies were evaluated based on the presence of antimony at a maximum concentration of 19.1 µg/l and vinyl chloride at an estimated maximum concentration of 3 µg/l. The following three remedial alternatives were developed for the site:

- Alternative 1 - No Action
- Alternative 2 - EPA Oversight of Existing Engineering, Institutional, and Regulatory Controls
- Alternative 3 - Groundwater Extraction and Physical/Chemical Treatment with Surface Water Discharge

The alternatives were evaluated on the basis of the following: the overall protection of human health and the environment, compliance with ARARs; long-term effectiveness; reduction of toxicity, mobility, and volume; short-term effectiveness; implementability; and cost.

Based on the comparison of alternatives in the FS, and upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives and public and state comments, the EPA selected Alternative 2 for the site. Under this alternative, the EPA would oversee the existing engineering, institutional and regulatory controls at the site for a limited period of time to ensure that they are operating as expected. The FDEP would retain regulatory control over the site for 20 years from the official closure date. All existing engineering, institutional, and regulatory controls would remain in effect. These controls included the following:

- A low-permeability landfill cap, which greatly reduces the amount of rainwater that infiltrates through the waste;

- An extensive stormwater management system, which further reduces the possibility of rainwater infiltration and leachate production;

- A leachate management system, which prevents as much leachate as possible from reaching the groundwater and prevents any direct exposure to the leachate;

- A landfill gas management system that actively collects gases produced by the landfill and eliminates them through an enclosed flare;

- A requirement that Broward County monitor groundwater, surface water and leachate (for 20 years) in accordance with the requirements of the landfill closure permit;

- A requirement that Broward County place affected residences in an area south of the landfill on public water, thus allowing natural attenuation to occur without risk to human health and the environment;

- A requirement that the site would hook up to public water prior to the site's use for any public purpose;

- A stipulation that residential and other types of developments be prohibited on-site; and,

- A requirement that the FDEP would retain regulatory control over the site's activities.

The selected alternative represented the best balance among the criteria used to evaluate the remedies. The selected alternative would reduce the toxicity, mobility, and volume of contaminated groundwater through natural attenuation and dilution at the site. In addition, the selected alternative was determined to be protective of human health and the environment, would attain all federal and state regulatory standards, was cost-effective and effective from a long-term standpoint.

Highlights of Community Involvement

All basic requirements for public participation under CERCLA Sections 113(k)(2)(B)(i-v) and 117 were met in the remedy selection process. Because the site is located in a residential area, community relations activities were focused on communication between the residents in the affected community and the government agencies conducting remedial activities at the site. Special attention was directed toward keeping the community informed of all study results. Meetings were held with Town of Davie officials. In addition, an availability session was held with the community in February 1994 to inform residents of the study results.

The RI Report, Baseline Risk Assessment Report, FS Report, and additional planning information for the site were released to the public prior to May 9, 1994. These documents were incorporated in the Administrative Record for the site. Notices of availability of the Administrative Record and site files were published in the Sun-Sentinel on February 10 and 13, 1994 and May 8 and 11, 1994.

On May 19, 1994, the EPA presented its preferred remedy for the site during a public meeting at the Town of Davie Community Hall. A 30-day public comment period was held from May 9, 1994 through June 8, 1994. The EPA's responses to comments, which were received during the comment period are contained in Appendix A of the 1994 ROD.

On August 11, 1994, a ROD to present the selected remedial action for OU2 was issued. The function of this remedy was to reduce the risks associated with exposure to contaminated groundwater. The major components of the selected remedy were as follows:

- Natural attenuation of vinyl chloride and antimony;

- Groundwater monitoring to confirm natural attenuation;

- Monitoring of residential wells to determine the impact upon such private wells; and,

- Public water supply connections for residents that have been affected by contamination in excess of the levels established by the Performance Standards.

Implementation of the selected remedy in conjunction with the remediation of the sludge lagoon and the landfill closure would protect human health and the environment. The selected remedy provided protection of human health and the environment by eliminating, reducing, and controlling risk through engineering control and/or institutional controls. The carcinogenic risk due to vinyl chloride and the non-carcinogenic risk due to antimony would be reduced to acceptable levels (i.e., cancer risk between 1×10^{-6} and 1×10^{-4} and non-cancer hazard quotient less than, or equal to, 1) once the Performance Standards were achieved. The Performance Standards are as follows:

Parameters	Performance Standards
Vinyl Chloride	1 µg/l
Antimony	6 µg/l

Based on the 1994 ROD, a Unilateral Administrative Order (UAO) was issued by the EPA to Broward County on October 5, 1994, which directed Broward County to perform the Remedial Design/Remedial Action (RD/RA) described in the ROD. Broward County Solid Waste Operations Division, in accordance with the UAO, submitted a Remedial Design Report. The purpose for the RD/RA was to monitor the performance of the selected remedy (natural attenuation) and to design and construct public water supply extensions, if necessary, to ensure protection of human health and the environment. The RD included those activities undertaken to develop the plans and specifications for public water supply extensions, general provisions for monitoring the remedy, and special requirements necessary to translate the ROD into the remedy to be constructed during the RA phase. The RA involved the implementation phase of the site cleanup or actual natural attenuation of contaminants and construction of the public water supply extensions, if necessary. The EPA approved the Remedial Design Report in September 1995.

Because the execution of the remedial design did not require any major construction activities, the EPA determined that a remedial action report was not necessary. On October 18, 1995, the EPA acknowledged that the requirements of the 1994 ROD had been fulfilled and that the remedial action at the site was both operational and functional.

Residential (Private) Well Monitoring Plan

The Remedial Design Report included a Residential (Private) Well Monitoring Plan. Specifics regarding this plan were as follows: The Broward County Public Health Unit began monitoring the wells for some of the residences in the Sunshine Ranches subdivision in 1988. The homes selected were located southeast of the area in which vinyl chloride contamination was found earlier in 1988.

Public water supply lines were extended in 1988 by Broward County to the area of Sunshine Ranches between Griffin Road and Palomino Drive (north and south boundaries) and between Volunteer Road and Hancock Road (west and east boundaries). Construction Permit No. 6-88-15012 for the public water line extension was issued on September 28, 1988 and was certified complete on November 22, 1988. The utility supplying the water to the area at the time was South Broward Utilities. In 1994, a water line was extended 300' east of Hancock Road on East Palomino Drive, under Construction Permit No. 6-94-15012 (issued on November 15, 1994). This line was funded through the Water Quality Assurance Trust Fund to provide water to two homes, which were affected by vinyl chloride contamination.

3.0 SUMMARY OF OPERATIONS AND MAINTENANCE ACTIVITIES

The operations and maintenance (O & M) period effectively started with the FDEP-certified landfill closure on February 7, 1995. Under the terms of the landfill closure permit, the O & M will continue through July 2015. Additionally, as required by the UAO, Broward County submits quarterly and annual summary status reports to the EPA. The purpose of the reports is to inform the EPA of work accomplished and work remaining to be accomplished at the site along with schedules. A copy of the FDEP Post-closure Monitoring Permit (No. 0126828-SF-001), issued on September 13, 2000 for the site, is included in Appendix D.

Presently, routine O & M at the site includes: site inspections, landfill cover maintenance, stormwater system maintenance, surface water management system maintenance, leachate collection system maintenance, groundwater monitoring well network maintenance, landfill gas recovery system maintenance, semiannual groundwater and leachate collection/analysis, and monthly landfill gas emissions monitoring. Specific operations and maintenance activities are being performed as follows:

- Landfill cover maintenance requirements include: mowing the vegetative cover, fertilizing and reseeding as needed. Continual inspections are conducted which look for leachate seepage, cracks, erosion and settlement. Repairs are performed as needed.

- Stormwater/surface water management system maintenance includes removal of debris and silt from various components of the drainage system (i.e., ditches, culverts, weirs, etc.) and repair of erosion or damage to the riprap areas.

- Groundwater monitoring system maintenance requirements consist of inspection of the groundwater monitoring wells during semiannual sample collection. Repairs are performed as needed.

- The leachate line is monitored at least twice per week for any unexplained pressure drops.

- The sanitary landfill gas collection and control system maintenance activities consists of monthly inspection of 33 gas extraction wells and six trench well headers for damage to piping, fittings, hoses, clamps and valves on a monthly basis. Additionally, the enclosed flare is inspected and maintained on a monthly basis.

3.1 Groundwater Monitoring

The FDEP Post-closure Monitoring Permit for the site requires that seven groundwater monitoring well clusters (numbered 3, 7, 8, 9, 11, 21 and 22) be sampled semiannually. Broward County typically conducts the groundwater sampling events during the months of April and September of each year. The well clusters are comprised of three monitoring wells at different depths with the exception of cluster #11, which is comprised of four monitoring wells at different depths. Groundwater samples collected from the wells are analyzed for a comprehensive suite of parameters in accordance with the FDEP Post-closure Monitoring Permit. Cluster #22 serves as the background well cluster, and clusters #11 and #21 are downgradient well clusters. All appropriate quality assurance/quality control measures have been, and will continue to be, followed for sample collection, sample transport and laboratory analytical testing. A Groundwater Monitoring Well Location Plan is provided in Appendix E.

3.2 Leachate Monitoring

The FDEP Post-closure Monitoring Permit requires that the leachate generated from the sanitary landfill be sampled semiannually. The leachate collection system from the sanitary landfill drains into a main sump, where it is pumped through a leachate force main to the City of Sunrise wastewater treatment plant. The leachate samples, collected from the main sump, are analyzed for a comprehensive suite of parameters. The ROD does not require that the landfill leachate meet any specific cleanup criteria. Broward County keeps records of the leachate discharge volume and rainfall data on a monthly basis. A summary table showing the monthly leachate discharge volume and monthly rainfall data from January 2000 through November 2003 is provided in Appendix F.

3.3 Surface Water Monitoring

The site uses the storage capacity from the three on-site borrow pits, the nature pond, and the perimeter berm to prevent stormwater/surface water from flowing off-site. The site is designed/constructed to maintain stormwater/surface water discharge until the 25-year (frequency), 72-hour (duration) storm stage is exceeded. The FDEP Post-closure Monitoring Permit requires that surface water sampling/analysis only be conducted if on-site stormwater/surface water discharges into waters of the State. To date, no surface water overflow event has occurred in which the site discharged stormwater/surface water off-site.

3.4 Gas Monitoring

The FDEP Air Operating Permit (Permit No. 0112399-001-AV), under Title V, requires that gas emissions from the site's sanitary landfill be monitored on a monthly basis. The permit requires that monthly monitoring of gas pressure, gas composition, oxygen concentration and gas temperature at each gas extraction well/trench and flare be recorded. Surface methane monitoring is conducted on an annual basis. Additionally, the sanitary landfill is inspected for evidence of stressed vegetation, cracks in the surface, and odors. Since it has been over 15 years since the last waste was deposited at the landfill, only a limited amount of landfill gas is being generated. Therefore, the gas collection and control system is presently operating on an intermittent schedule as approved by FDEP due to the landfill gas being significantly depleted.

The O & M activities described above provide assurance that the ongoing site practices are sufficient to maintain the protectiveness of the remedy. All necessary engineering, institutional, and regulatory controls are in place. Broward County shall continue to diligently conduct the required O & M activities in an effort to maintain the protectiveness of the remedy.

Select photographs of the site depicting current site conditions are included in Appendix G.

3.5 Operations and Maintenance Costs

The costs associated with the closure (including site investigations and remedial actions) and post-closure monitoring/maintenance (including future operation and maintenance costs for the site) are estimated to be between $16 million and $18 million. The current estimated annual operations and maintenance cost is $250,000.

4.0 GROUNDWATER DATA

4.1 Performance Standards

As stated previously, groundwater samples are collected/analyzed on a semiannual basis for a comprehensive suite of parameters as required by the FDEP Post-closure Monitoring Permit. Based on the groundwater analytical results over the last seven semiannual sampling events (September 2000 through September 2003), the concentrations of vinyl chloride and antimony were shown to be below the established Performance Standards of 1 µg/l and 6 µg/l, respectively. Broward County has provided the EPA and the FDEP with this information through submittal of its Semiannual Groundwater and Leachate Monitoring Reports, prepared by Envirodyne, Inc. A summary table of the laboratory analytical results since May 2000 for vinyl chloride and antimony is provided in Appendix H.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This report has provided a comprehensive discussion of the significant events that have taken place since the site was placed on the NPL in 1983. The results of numerous investigations/assessments showed that the remediation of the sludge lagoon in 1989, as required by the EPA's ROD of 1985, was effective in reducing contamination at the site. Ultimately, it was concluded that antimony and vinyl chloride were the most likely site-related groundwater contaminants identified in the vicinity of the site.

In August 1994, a ROD to present the selected remedial action for OU2 was issued. The function of this remedy was to reduce the risks associated with exposure to contaminated groundwater. The major components of the selected remedy were as follows:

- Natural attenuation of vinyl chloride and antimony;
- Groundwater monitoring to confirm natural attenuation;
- Monitoring of residential wells to determine the impact upon such private wells; and,
- Public water supply connections for residents that were affected by contamination in excess of the levels established by the Performance Standards.

Based on the ROD of 1994, a Unilateral Administrative Order (UAO) was issued by the EPA, which directed Broward County to perform the Remedial Design/Remedial Action (RD/RA) described in the ROD. The purpose for the RD/RA was to monitor the performance of the selected remedy (natural attenuation), and to design and construct public water supply extensions, if necessary, to ensure protection of human health and the environment. Public water lines were extended to residences affected by groundwater contamination in 1988 and 1994.

According to the 1994 ROD, when the groundwater cleanup goals (Performance Standards) had been reached for a period of one year, the site could be considered for deletion from the NPL. Based on the groundwater analytical results over the last seven semiannual sampling events (September 2000 through September 2003), the concentrations of vinyl chloride and antimony have been shown to be below the established Performance Standards of 1 µg/l and 6 µg/l, respectively. The Performance Standards for the selected remedy established in the 1994 ROD have been achieved for the site. The groundwater data confirms the effectiveness of the selected remedy.

The information provided in this report demonstrates that the cleanup activities were successfully implemented, the Performance Standards have been met for a period of three years, the remedy is operational and functional, engineering/institutional/regulatory controls are in place, are effective and will continue to be diligently maintained, all remedial activities are complete, and the remedy continues to be protective of human health and the environment. Broward County has met or exceeded all of the regulatory requirements of the 1994 ROD; therefore, **we respectfully request that the EPA pursue the process of deleting the site from the NPL.**

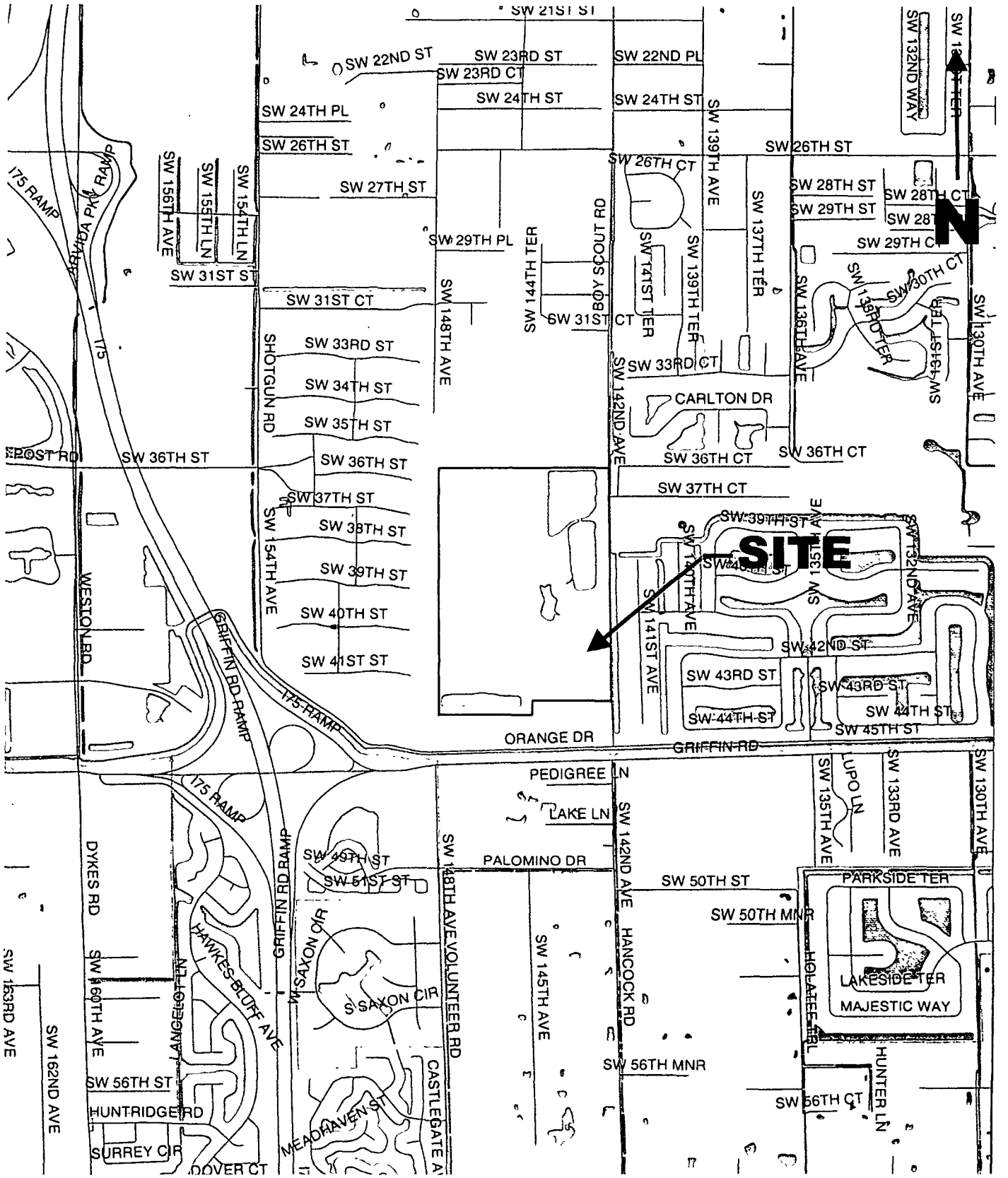
6.0 REFERENCES

The sources below were used during the preparation of this report.

- Sludge Lagoon Cleanup-Final Remedial Construction Report, Post, Buckley Schuh & Jernigan, Inc. (December 1989)
- Site History Report, Camp Dresser & McKee, Inc. (May 1992)
- Remedial Investigation Report, Camp Dresser & McKee, Inc. (October 1993)
- Baseline Risk Assessment Report, Roy F. Weston, Inc. (December 1993)
- Five-Year Review Report, U.S. Environmental Protection Agency (January 1994)
- Feasibility Study, Camp Dresser & McKee, Inc. (April 1994)
- Record of Decision, U.S. Environmental Protection Agency (August 11, 1994)
- Unilateral Administrative Order, U.S. Environmental Protection Agency (October 5, 1994)
- Remedial Design Report, Broward County Solid Waste Operation Division (1995)
- Five-Year Review Report, U.S. Environmental Protection Agency (May 2000)
- Semiannual Groundwater and Leachate Monitoring Reports, Envirodyne, Inc. (May 2000 – September 2003
- Assorted Aerial Photographs (1965, 1973, 1975, 1977, 1984, 1990, 1995), Broward County Engineering Department
- Aerial and Map Atlas, First American Real Estate Solutions (2002)

APPENDIX A

Site and Vicinity Map



BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

SITE AND VICINITY MAP

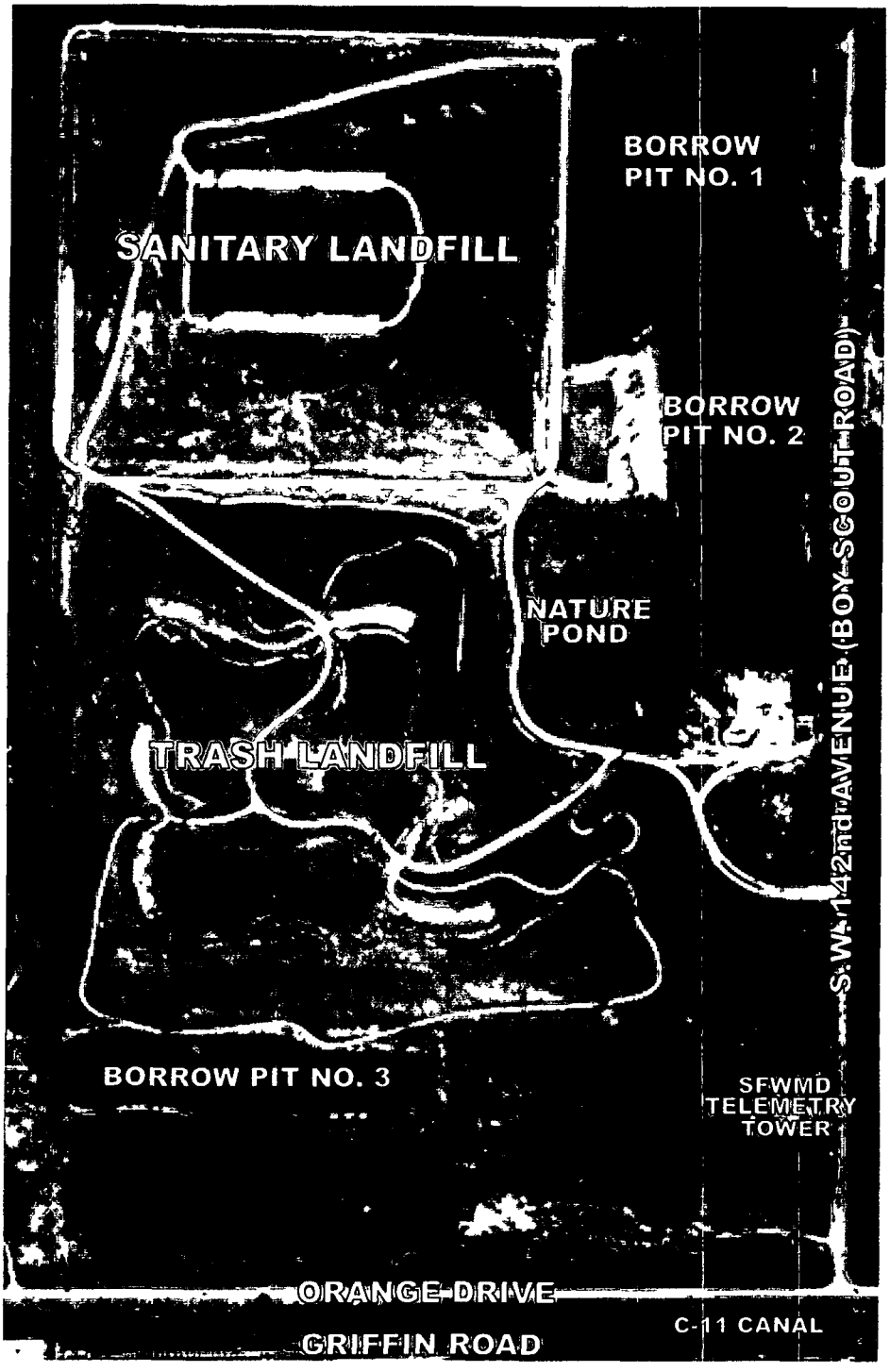
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE — FLORIDA

Completion Report	1 inch = 2000 feet	December 30, 2003	Appendix A
PROJECT	SCALE	DATE	FIG NO

APPENDIX B

2002 Aerial Photograph



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BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

2002 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE — FLORIDA

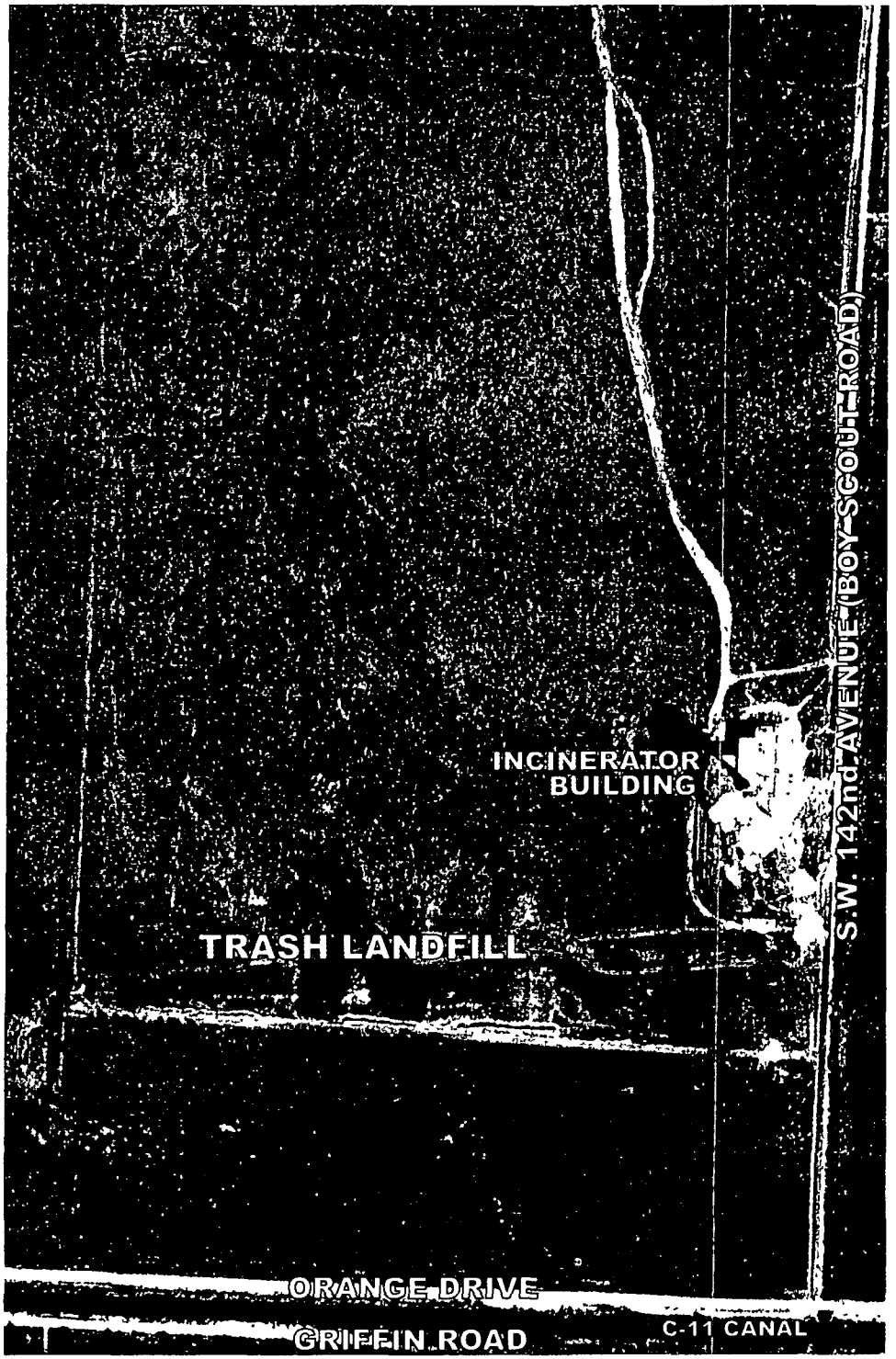
Completion Report	1 inch = 600 feet	December 30, 2003	Appendix B
PROJECT	SCALE	DATE	FIG NO

APPENDIX C

Chronology of Events
And
Assorted Aerial Photographs

Chronology of Events

Event	Date
Incinerator and trash landfill (south mound) operations commence	1964
Sludge lagoon created and operations begin	November 1971
Broward County initiates water quality monitoring program in cooperation with the U.S. Geological Survey at the subject site	1974
Shutdown of incinerator due to excessive particulate matter emissions	June 1975
Cell Nos. 1-4 constructed as Class I/sanitary (north mound) landfill	1976
Cell Nos. 5-8 constructed as part of Class I/sanitary (north mound) landfill	1978
Subject Site designated as a Hazardous Waste Site under the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA) – sludge lagoon disposal operations terminated	1981
Cell Nos. 9-13 constructed as part of Class I/sanitary (north mound) landfill	1982
Sludge lagoon samples (collected by EPA) revealed high levels of cyanide and sulfides	August 1982
Davie Landfill was officially placed on the National Priorities List (NPL)	September 1983
EPA issued Record of Decision to cleanup sludge lagoon – defined as Operable Unit 1	September 1985
Operational permit granted for Cell No. 14 (construction completed March 1985)	April 1986
Broward County submits closure plan for landfill to FDER	December 1987
Landfills at subject site officially close – no longer accepting waste	December 1987
Permit issued by FDER to close the landfill (Permit No. SF-06-143540)	May 1988
Private wells in Sunshine Ranches development indicate high levels of vinyl chloride – residents provided bottled water	August 1988
Public water supply lines were extended by Broward County to the area of Sunshine Ranches between Griffin Road and Palomino Drive (north and south boundaries) and between Volunteer Road and Hancock Road (west and east boundaries)	November 1988
Removal of source contamination from sludge lagoon; remedial action for Operable Unit 1 completed – sludge stabilized and disposed of in Cell No. 14	May 1989
Municipal water service supplied to areas affected by groundwater contamination	Nov./Dec. 1989
HRS Health Assessment described subject site as a public health hazard	August 1991
Determination made that EPA Remedial Investigation/Feasibility Study process will be followed to address landfill closure and remediation	November 1991
EPA and Broward County entered into an Administrative Order by Consent (AOC) for the completion of the Remedial Investigation/Feasibility Study (RI/FS) process consistent with CERCLA and the National Contingency Plan (NCP)	Feb./March 1992
Remedial Investigation completed for Operable Unit 2	October 1993
Feasibility Study completed for Operable Unit 2	April 1994
EPA issue Record of Decision for Operable Unit 2 – presents selected remedial action for the subject site which include groundwater Performance Standards	August 1994
Public water supply line was extended 300' east of Hancock Road on East Palomino Drive	Issued Nov. 1994
Solid Waste Post-Closure Permit issued by FDEP	February 1995
Remedial Action initiated (implementation of selected remedy) for Operable Unit 2	October 1995
Monitoring program demonstrates that natural attenuation was effective by meeting the Performance Standards for 2½ year period	September 2000 to April 2003



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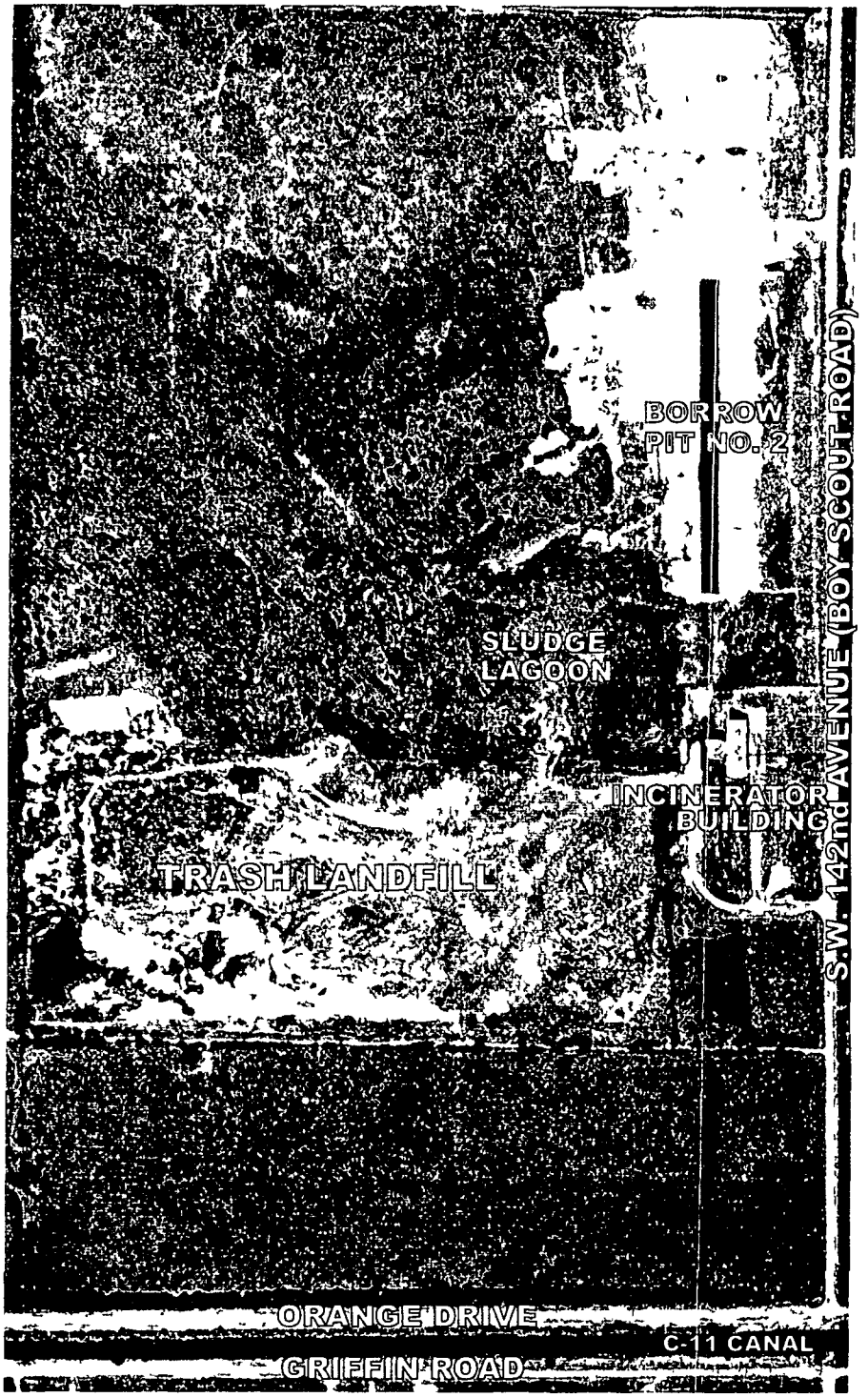
BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1965 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE *FLORIDA*

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO



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BROWARD COUNTY FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1973 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO

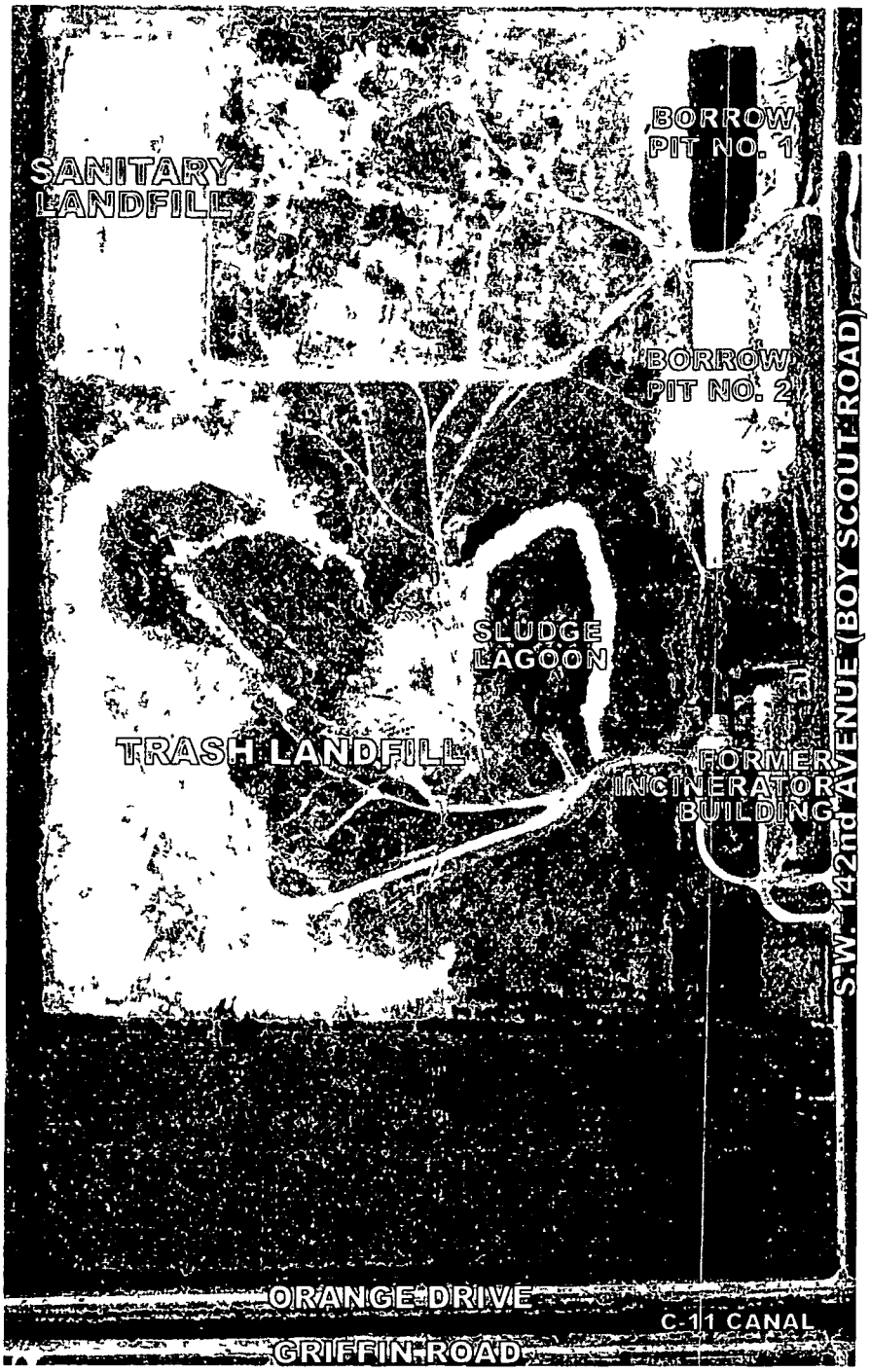
BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1975 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE — FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO



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BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1977 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO

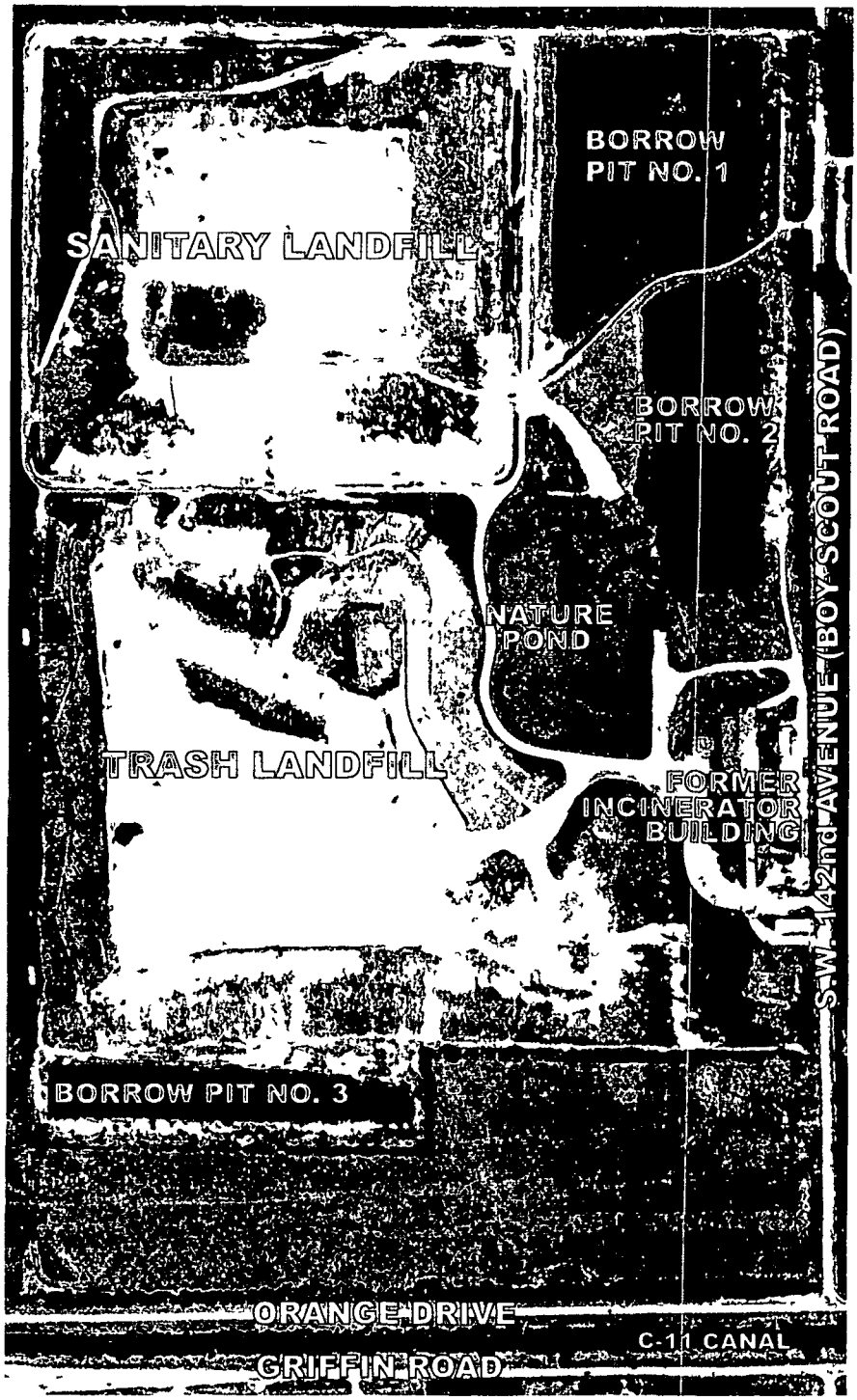
BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1984 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE — FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO



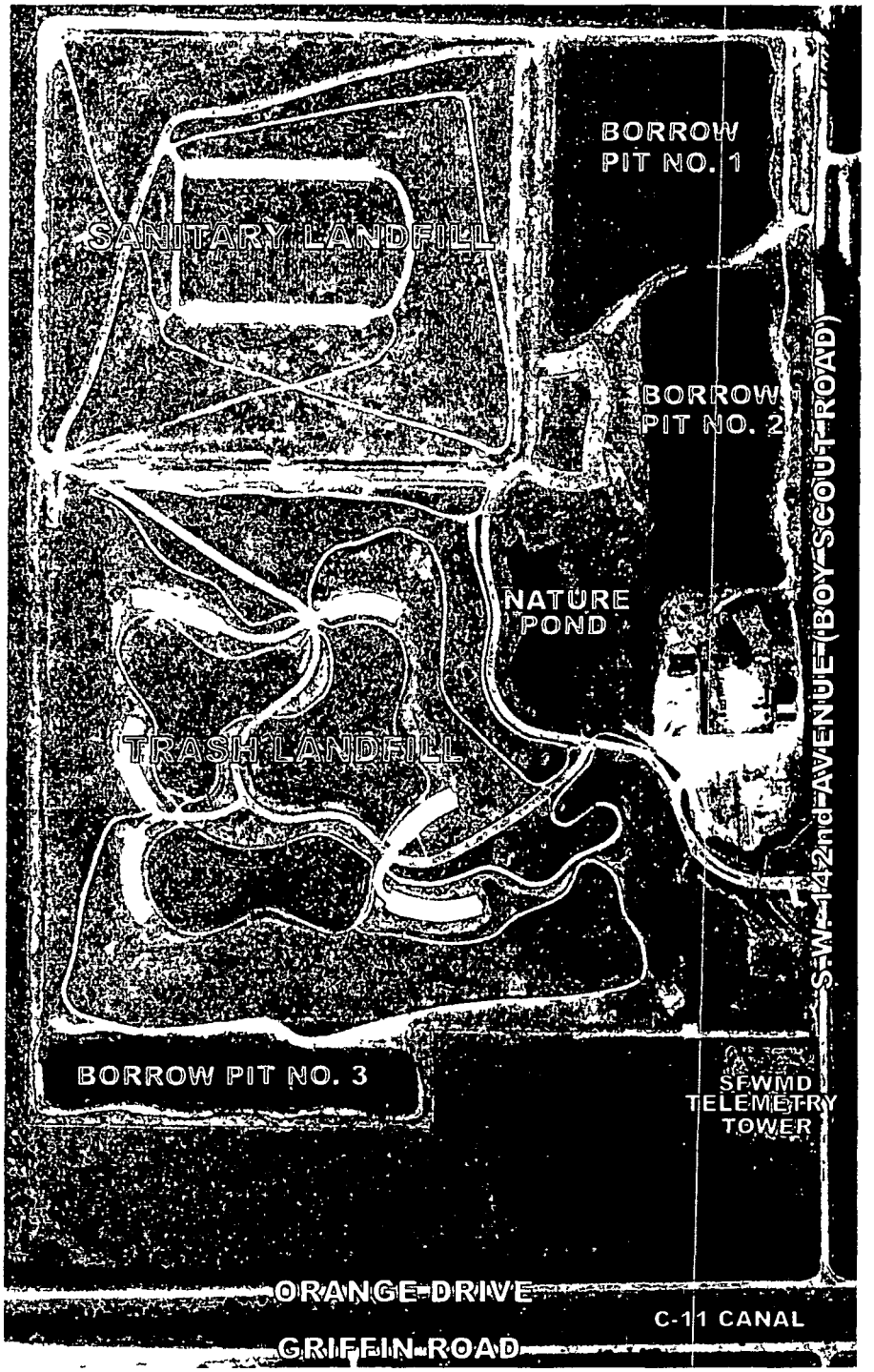
BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT
SOLID WASTE OPERATIONS DIVISION

1990 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE

DAVIE — FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO



BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

1995 AERIAL PHOTOGRAPH
DAVIE LANDFILL
4001 S.W. 142nd AVENUE
DAVIE FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix C
PROJECT	SCALE	DATE	FIG NO

APPENDIX D

FDEP Post-closure Monitoring Permit

CO-348

Department of Environmental Protection

Jeb Bush
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416
NOTICE OF PERMIT

David B. Struhs
Secretary

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

1 2 2000

Ms. Mary Beth Busutil, Director
Office of Integrated Waste Management
Bldg. B, Suite 400
1 North University Drive
Plantation, FL 33324

Dear Ms. Busutil:

Enclosed is Permit Number 0126828-SF-001 to continue post-closure monitoring of an existing closed landfill.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department. The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57,F.S., before the deadline for filing a petition. Persons who have filed such a petition may seek to mediate the dispute, and choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for pursuing mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions by the applicant or any of the parties listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by other persons must be filed within fourteen days of publication of the notice or receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.A.C., however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information.

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;

(d) A statement of all material facts disputed by petitioner or a statement that there are no disputed facts;

(e) A statement of the ultimate facts alleged, including a statement of the specific facts which the petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wants the Department to take with respect to the Department's action or proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation. The election may be accomplished by filing with the Department a mediation agreement with all parties to the proceeding (i.e., the applicant, the Department, and any person who has filed a timely and sufficient petition for a hearing). The agreement must contain all the information required by Rule 28-106.404, F.A.C. The agreement must be received by the clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within ten days after the deadline for filing a petition, as set forth above. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement.

As provided in Section 120.573, F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, F.S., for holding an administrative hearing and issuing a final order. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons seeking to protect their substantial interests that would be affected by such a modified final decision must file their petitions within fourteen (14) days of receipt of this notice, or they shall be deemed to have waived their right to a proceeding under Sections 120.569 and 120.57, F.S. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, F.S., are resumed.

Any party to this order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district

DEP File No. 0126828-SF-001

court of appeal. The notice of appeal must be filed within thirty days after this order is filed with the clerk of the Department.

Should you have any questions, please contact Mr. Joseph Lurix of this office, telephone number (561)681-6669.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Vivek Kamath, P.E.
Waste Programs Administrator
Southeast District

VK/LH/JH/jl

CERTIFICATE OF SERVICE

This is to certify that this **NOTICE OF PERMIT MODIFICATION** and all copies were mailed before the close of business on SEP 13 2000 to the listed persons.

FILING AND ACKNOWLEDGMENT:

FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

SEP 13 2000
Date

Copies furnished to:

Sermin Unsal, BCDPEP
Jim Harmon, DEP/SED/WCU
Barbara Dick, USEPA - Region IV
Richard Tedder, P.E. DEP/TLH, MS 4565
George Heuler, WCS/TLH
Tor Bejnar, SW/TLH

Department of Environmental Protection

Jeb Bush
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

David B. Struhs
Secretary

PERMITTEE:

Ms. Mary Beth Busutil, Director
Office of Integrated Waste Management
Bldg. B, Suite 400
1 North University Drive
Plantation, FL 33324

I.D. NUMBER: 5006C06070
PERMIT/CERTIFICATION NUMBER: 0126828-SF-001
DATE OF ISSUE:
EXPIRATION DATE:
COUNTY: Broward
LATITUDE/LONGITUDE: 26°04'47"/80°19'15"
SECTION/TOWNSHIP/RANGE: 22 & 27/50S/40E
PROJECT: Broward County Sanitary Landfill

This permit is issued under the provisions of Chapter 403, Florida Statutes, (F.S.), and Rules 62-302, 62-520, 62-522 and 62-701, Florida Administrative Code, (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

TO CONTINUE POST-CLOSURE MONITORING: Of a Solid Waste Resource and Recovery Management Facility totaling 209 acres (48 acres Class I, 68 acres Class III and a former 4 acre sludge lagoon).

IN ACCORDANCE WITH: An application for permit to continue post-closure monitoring of a Solid Waste Resource Recovery and Management Facility dated June 14, 2000 and additional information submitted on July 28, 2000, along with previous documentation submitted as part of the closure application on July 3, 1995, August 1, 1994, January 14, 1994, July 14, 1993, April 28, 1993, March 5, 1993, February 19, 1988, February 2, 1988, January 26, 1988 and December 28, 1987 respectively.

LOCATED AT: 4001 S.W. 142 Avenue, Davie, Broward County, Florida.

SUBJECT TO: General Conditions 1-15 (attached as pages 2 and 3) and Specific Conditions 1-14 (attached as pages 4 through 7).

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

   a. Having access to and copying any records that must be kept under the conditions of the permit;
   b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

   a. a description of and cause of non-compliance; and
   b. the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

GENERAL CONDITIONS Cont'd:

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use in proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-730.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

    ( ) Determination of Best Available Control Technology (BACT)
    ( ) Determination of Prevention of Significant Deterioration (PSD)
    ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
    ( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

    b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        - the date, exact place, and time of sampling or measurements;
        - the person responsible for performing the sampling or measurements
        - the date(s) analyses were performed;
        - the person responsible for performing the analyses;
        - analytical techniques or methods used; and
        - results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS Cont'd:

If any surface water analytical results exceed the Department's water quality standard in Chapter 62-302, F.A.C., a confirmatory sample shall be taken within fourteen (14) days of the permittee's receipt of the data if stormwater is still being discharged. The Department's Southeast District Waste Cleanup section must be notified seven days prior to any surface water resampling event. Should the permittee chose not to resample, the Department will consider the water quality analysis as representative of current surface water conditions at the facility. If the data is confirmed, or the permittee chooses not to resample, the permittee shall notify the Department in writing within fourteen (14) days of this finding.

Leachate Monitoring Requirements

8. Leachate samples shall be collected semi-annually (April and October) at the leachate main sump and analyzed for the parameters listed in Exhibit B. The sampling analysis reports shall be submitted concurrently with the ground water and surface water analyses reports.

Quality Assurance and Quality Control Requirements

9. All sampling and analysis activities shall be performed by organizations that have Comprehensive Quality Assurance Plans approved in accordance with Rule 62-160.300(8), F.A.C. All sampling, analysis, recording and reporting activities for groundwater, surface water and leachate shall be in accordance with the Department's quality assurance and quality control requirements described in Chapter 62-160, F.A.C.

10. Stormwater shall meet the water quality standards as established in Chapter 62-302, F.A.C. at the point of discharge from the stormwater management system into waters of the State.

Post Closure

11. The permittee shall maintain compliance with the financial assurance requirements of Rule 62-701.630, F.A.C., by submitting all required updated supporting documentation in accordance with Rule 62-701.630, F.A.C. and 40 CFR Part 264, Subpart H as adopted by reference in Rule 62-701.630, F.A.C. All submittals in response to this specific condition shall be submitted to:

    Financial Coordinator, Solid Waste Section
    Florida Department of Environmental Protection
    2600 Blair Stone Road, MS 4565
    Tallahassee, FL 32399-2400

    The permittee shall, in addition to annually adjusting the long-term care cost estimate, adjust the financial assurance mechanism to reflect an increase in cost estimate. Cost estimate adjustments shall be in accordance with Rule 62-701.630(4), F.A.C. Instrument adjustments shall be in accordance with Rule 62-701.630, F.A.C. and 40 CFR Part 264, Subpart H as adopted by reference in Rule 62-701.630, F.A.C. Documentation of financial mechanism increases shall be submitted to:

    Financial Coordinator, Solid Waste Section
    Florida Department of Environmental Protection
    2600 Blair Stone Road, MS 4565
    Tallahassee, FL 32399-2400.

SPECIFIC CONDITIONS Cont'd:

All estimate update submittals shall be sent to:

Florida Department of Environmental Protection
Southeast District Solid Waste Section
P.O. Box 15425
West Palm Beach, FL 33416-5425.

12. The Department retains regulatory control over any activities which may affect the integrity of the environmental protection measures such as landfill cover, drainage, liners, monitoring system or leachate and stormwater controls. Consultation with the Department is required prior to conducting activities at the closed landfill.

13. The permittee shall provide public potable water to the park prior to the opening the park to the public.

14. The permittee shall apply for renewal of this Permit in accordance with Rule 62-701.320, F.A.C.

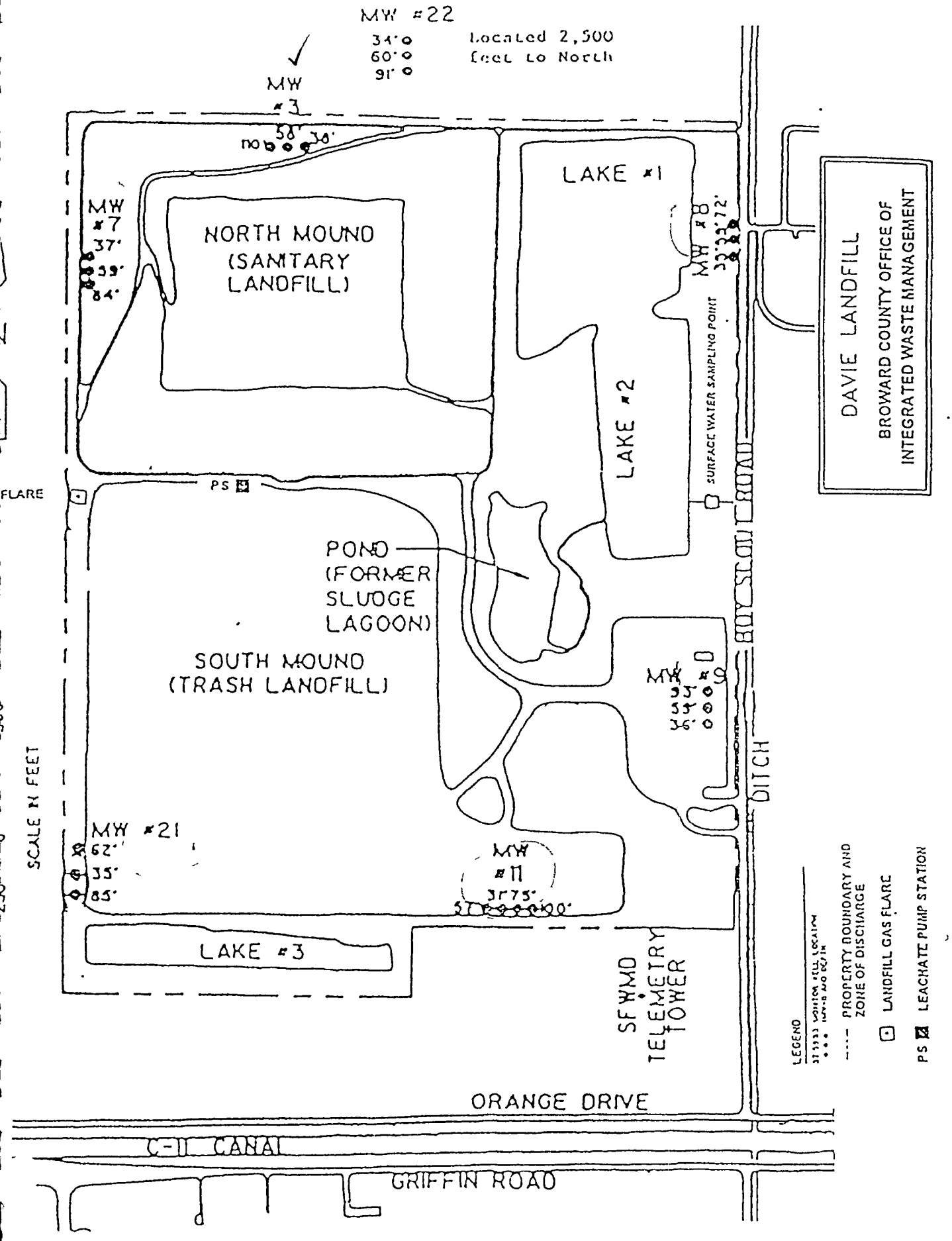
Issued this 12th day of September, 2000
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

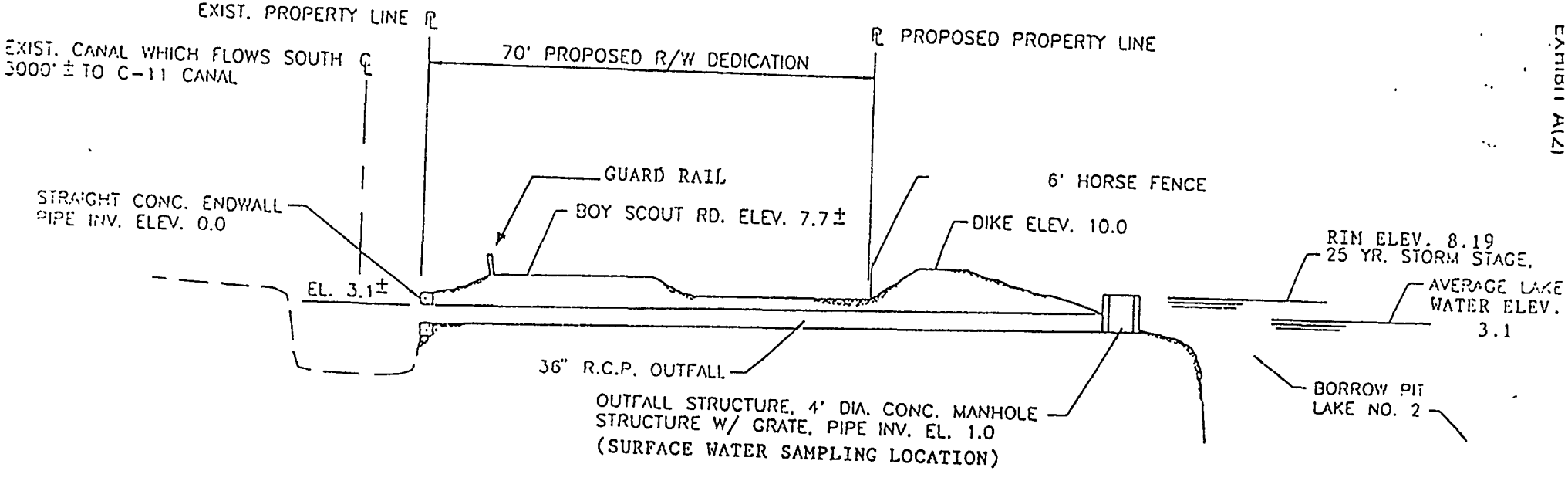
Vivek Kamath

Vivek Kamath, P.E.
Waste Programs Administrator
Southeast District

VK/LH/JH/jl

EXHIBIT A(1)


MW #22
34'0
60'0
91'0
Located 2,500 feet to North
MW #3
58'
30'
MW #7
37'
39'
84'
NORTH MOUND (SANITARY LANDFILL)
LAKE #1
MW #8
33'33'72'
SURFACE WATER SAMPLING POINT
LAKE #2
DAVIE LANDFILL
BROWARD COUNTY OFFICE OF INTEGRATED WASTE MANAGEMENT
FLARE
PS
POND (FORMER SLUDGE LAGOON)
SOUTH MOUND (TRASH LANDFILL)
MW #9
DITCH
MW #21
62'
35'
85'
MW #11
3r75'
LAKE #3
SFWMD TELEMETRY TOWER
ORANGE DRIVE
C-11 CANAL
GRIFFIN ROAD
SCALE IN FEET
0
250
LEGEND
PROPERTY BOUNDARY AND ZONE OF DISCHARGE
LANDFILL GAS FLARE
PS LEACHATE PUMP STATION



Lake Outfall Structure (Davie Landfill)

EXHIBIT B
SUMMARY OF WATER QUALITY MONITORING PLAN FOR BROWARD COUNTY LANDFILL AT DAVIE
FDEP SOLID WASTE MANAGEMENT PERMIT NUMBER SF 06-227119

GROUNDWATER MONITORING

Cluster	Well No.	Location UTM	Well Depth (feet)[1]	Elevation TOC[2] (ft. NGVD)	Screen Length (feet)	Monitoring Zone	Type of Well	Sampling Frequency	Monitoring Parameters	
									Field Parameters	Laboratory Parameters
3	3-38	9461702.41658-1855896.69406	38	10.60	5	Shallow	Compliance	Semi-Annually	Static water level in wells before purging Specific conductivity pH Dissolved oxygen Turbidity Temperature Colors and sheens (by observations)	Total ammonia - N Antimony Arsenic Cadmium Chromium Iron Lead Mercury Nitrate Sodium Total Dissolved Solids (TDS) Total Coliform Volatile Organic Compounds (EPA Method 601/602) Zinc
	3-58	9461702.46176-1855890.45099	58	10.66	5	Intermediate	Compliance	Semi-Annually		
	3-110	9461702.40278-1855884.25040	110	10.67	5	Deep	Compliance	Semi-Annually		
7	7-37	9460986.24504-1854889.31645	37	10.95	5	Shallow	Compliance	Semi-Annually		
	7-59	9460980.08594-1854889.09653	59	10.89	5	Intermediate	Compliance	Semi-Annually		
	7-84	9460973.42402-1854889.27797	84	10.77	5	Deep	Compliance	Semi-Annually		
8	8-35	9461836.12969-1857438.66711	35	9.50	5	Shallow	Compliance	Semi-Annually		
	8-59	9461829.81511-1857439.02457	59	9.29	5	Intermediate	Compliance	Semi-Annually		
	8-72	9461822.73327-1857439.15256	72	9.32	5	Deep	Compliance	Semi-Annually		
9	9-36	9459351.91385-1857343.00492	36	11.40	5	Shallow	Compliance	Semi-Annually		
	9-59	9459357.22444-1857343.10098	59	11.35	5	Intermediate	Compliance	Semi-Annually		
	9-93	9459363.19311-1857343.25273	93	11.12	5	Deep	Compliance	Semi-Annually		
11	11-31	9458459.21906-1856450.17873	31	9.33	5	Shallow	Compliance	Semi-Annually		
	11-57	9458460.23431-1856436.75681	57	9.08	5	Intermediate	Compliance	Semi-Annually		
	11-75	9458455.15894-1856463.99022	75	7.88	5	Intermediate	Compliance	Semi-Annually		
	11-100	9458458.55418-1856469.678098	100	9.44	5	Deep	Compliance	Semi-Annually		
21	21-35	9458690.87188-1854932.29929	35	11.11	5	Shallow	Compliance	Semi-Annually		
	21-62	9458677.93110-1854931.57104	62	9.97	5	Intermediate	Compliance	Semi-Annually		
	21-85	9458685.13384-1854931.03972	85	11.38	5	Deep	Compliance	Semi-Annually		
22	22-34	9463678.02960-1855690.38404	34	8.99	10	Shallow	Background	Semi-Annually		
	22-60	9463687.38880-1855696.46886	60	8.96	10	Intermediate	Background	Semi-Annually		
	22-91	9463663.80705-1855696.37210	91	8.74	10	Deep	Background	Semi-Annually		

Note 1: Well depth is measured from the top of the inner casing with the cap removed.
Note 2: Elevation is measured at the top of the inner casing with the cap removed. All elevations are NGVD.
Note 3: The detection limits for all parameters monitored are below state's drinking water standards.

(Revised 7/7/95 with new permit #)

EXHIBIT B (Continued)
SUMMARY OF WATER QUALITY MONITORING PLAN FOR BROWARD COUNTY LANDFILL AT DAVIE
FDEP SOLID WASTE MANAGEMENT PERMIT NUMBER SF 06-227119

SURFACE WATER MONITORING

LOCATION	SAMPLING FREQUENCY	MONITORING PARAMETERS	
		FIELD PARAMETERS	LABORATORY PARAMETERS
STORMWATER OUTLET STRUCTURE	DURING STORMWATER DISCHARGE	Specific conductivity, pH, Dissolved oxygen, Turbidity, Temperature, Colors, Sheens (by observations)	Unionized ammonia, Total hardness, Biochemical oxygen demand (BOD_5) Copper, Iron, Mercury, Nitrate, Zinc, Total dissolved solids (TDS), Total organic carbon (TOC) Fecal coliform, Total phosphates, Chlorophyll A, Total nitrogen, Chemical oxygen demand (COD), and Total suspended solids (TSS)

LEACHATE MONITORING

LOCATION	SAMPLING FREQUENCY	MONITORING PARAMETERS	
		FIELD PARAMETERS	LABORATORY PARAMETERS
LEACHATE MAIN SUMP	SEMI-ANNUALLY	Specific conductivity, pH, Dissolved oxygen, Colors, Sheens	Total ammonia - N, bicarbonate, Chlorides, Iron, Mercury Nitrate, Sodium, Total dissolved solids (TDS) Volatile Organic Compounds (EPA Methods 601 & 602)

(Revised 7/7/95 with new permit #)

DEP Form # 62-622 900(2)

Form Title GROUND WATER MONITORING REPORT

Effective Date

DEP Application No.

Florida Department of Environmental Protection

Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

GROUND WATER MONITORING REPORT

Rule 62-522.600(11)

PART I GENERAL INFORMATION

(1) Facility Name _____

Address _____

City _____ Zip _____

Telephone Number ( ) _____

(2) The GMS Identification Number _____

(3) DEP Permit Number _____

(4) Authorized Representative Name _____

Address _____

y _____ Zip _____

Telephone Number ( ) _____

) Type of Discharge _____

(6) Method of Discharge _____

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe at the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

te: _____ _____

Signature of Owner or Authorized Representative

RT II QUALITY ASSURANCE REQUIREMENTS

Sample Organization Comp QAP # _____

alytical Lab Comp QAP #/HRS Certification # _____

*Comp QAP #/HRS Certification # _____

me _____

dress _____

Phone Number ( ) _____

EXHIBIT C

PART III ANALYTICAL RESULTS

Facility GMS #: _____ Sampling Date/Time: _____

T Site ID #: _____ Report Period: _____
(year/quarter)

Well Name: _____ Well Purged (Y/N): _____

Classification of Ground Water: _____ Well Type: ( ) Background
( ) Intermediate
( ) Compliance
( ) Other

Ground Water Elevation (NGVD): _____

or (MSL): _____

Storet Code	Parameter Monitored	Sampling Method	Field Filtered Y/N	Analysis Method	Analysis Date/Time	*Analysis Results/Units	Detection Limits/Units

ttach Laboratory Reports

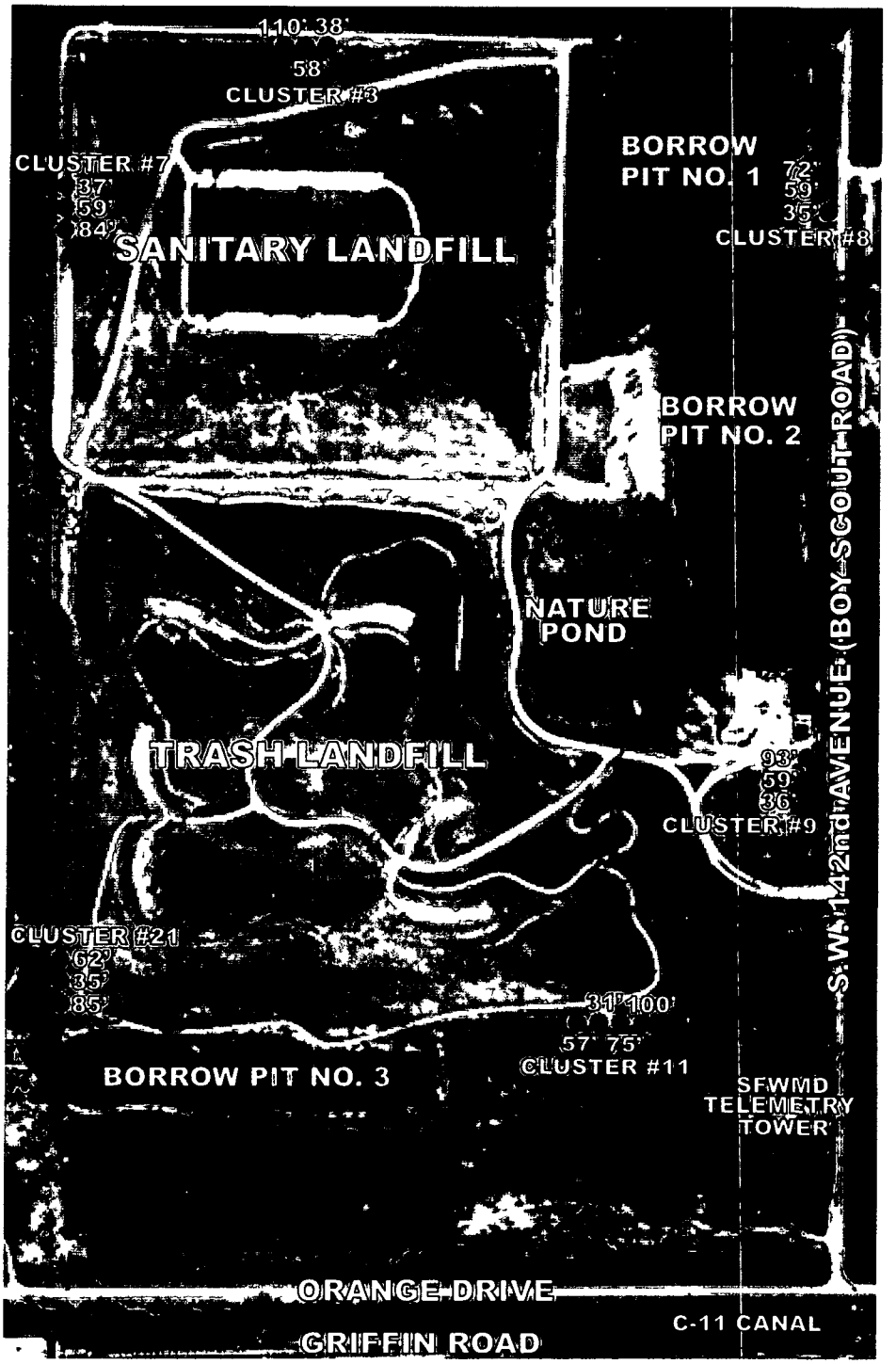
— EXHIBIT C —

APPENDIX E

Groundwater Monitoring Well Location Plan

34'●
60'●
91'● (CLUSTER #22 IS APPROXIMATELY 1,850 FEET NORTH OF CLUSTER #3)

CLUSTER #22



N

LEGEND

CLUSTER/MONITORING WELL LOCATIONS ARE APPROXIMATE

●●● (CLUSTER #3) MONITORING WELL LOCATION AND DEPTH
110' 58' 38'

BROWARD COUNTY
FLORIDA

BROWARD COUNTY
OFFICE OF INTEGRATED WASTE MGMT.
SOLID WASTE OPERATIONS DIVISION

GROUNDWATER MONITORING WELL LOCATION PLAN

DAVIE LANDFILL
4001 S.W. 142nd AVENUE
DAVIE FLORIDA

Completion Report	1 inch = 600 feet	December 30, 2003	Appendix E
PROJECT	SCALE	DATE	FIG NO

APPENDIX F

Summary of Leachate Discharge Volume and Rainfall Data
(January 2000 through November 2003)

APPENDIX G

Site Photographs - 2003

Photo 1	Vista View Park sign at entrance to the subject site.

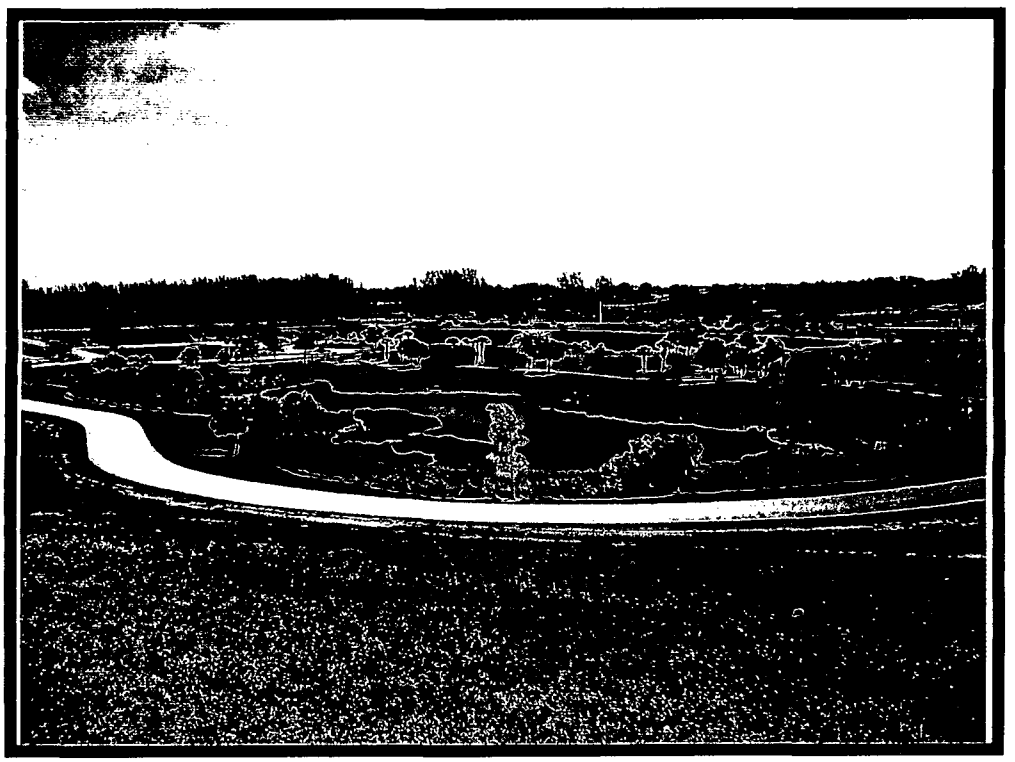


Photo 2	View from the top of trash landfill (south mound) facing northeast; nature pond in the forefront and borrow pits #1 and #2 in the background.

Photo 3	**View from the top of the sanitary landfill (north mound) facing east-southeast of borrow pits #1 and #2. Imagination Farms residences in the background.**

Photo 4	**View of borrow pits #1 and #2 facing north-northeast.**

Photo 5	View of borrow pit #1 in the foreground and the sanitary landfill in the background – facing west-northwest.

Photo 6	View of borrow pit #1 in foreground and Boy Scouts of America campsite in the background – facing northeast.

Photo 7	View of the stormwater swale located on the east side of the sanitary landfill – facing south.

Photo 8	View of the stormwater structure, which connects the stormwater swale (sanitary landfill) to borrow pit #1.

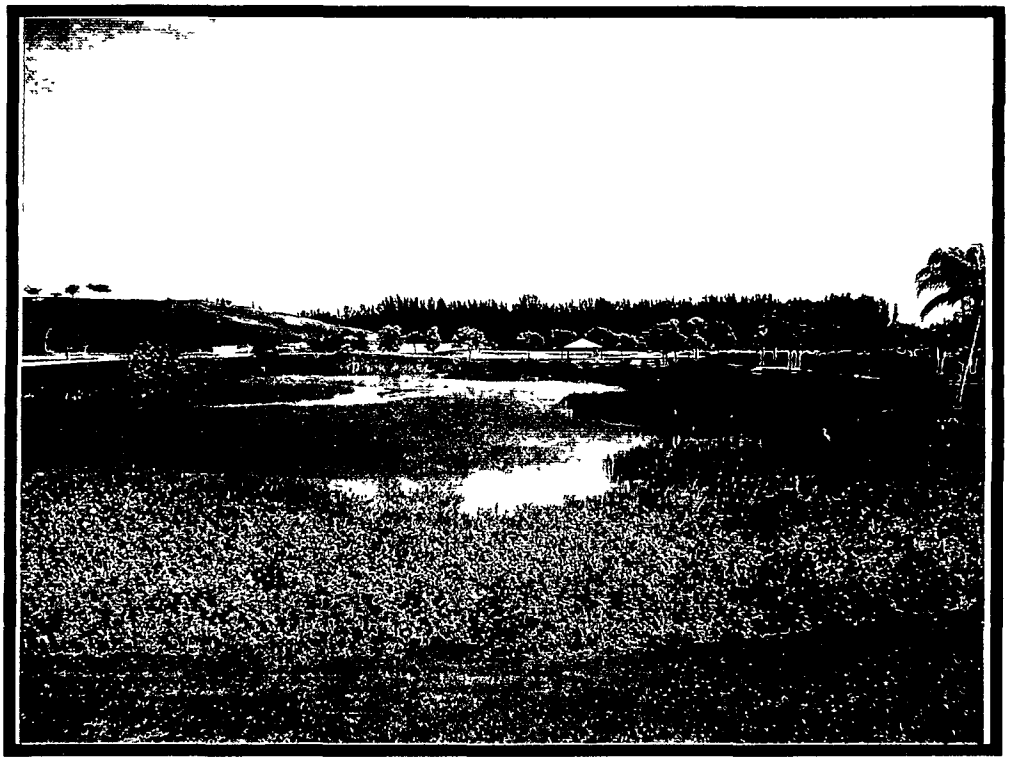


Photo 9	**View of the nature pond (former sludge lagoon) in the foreground and the sanitary landfill in the background – facing north.**

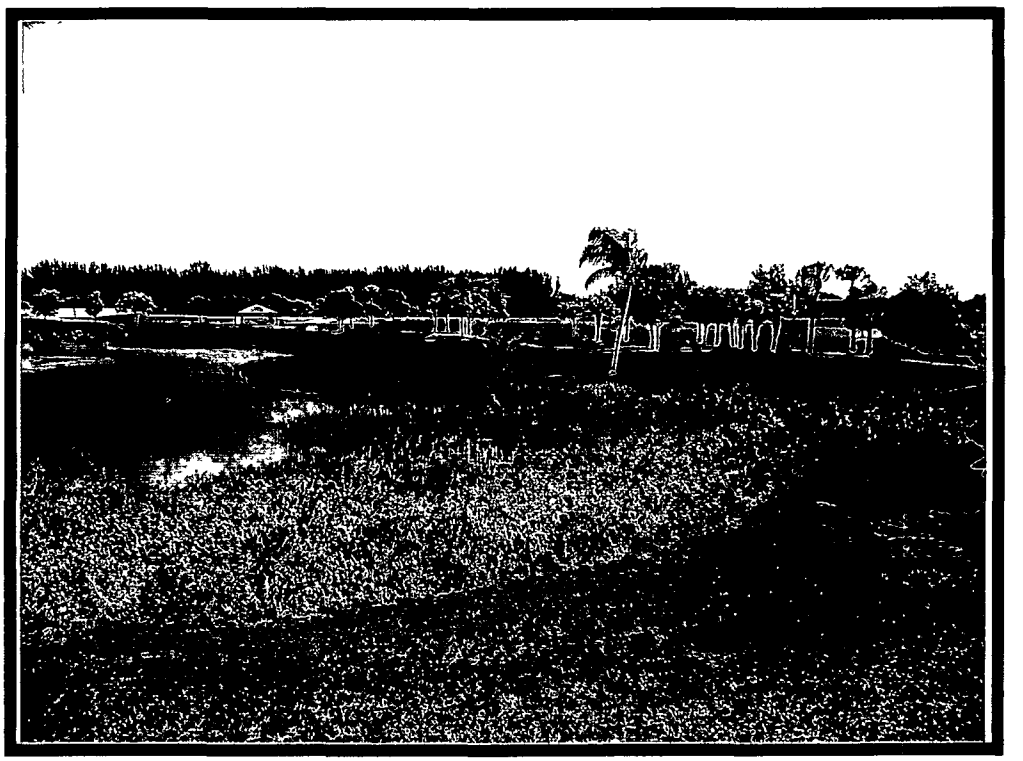


Photo 10	**Another view of the nature pond facing north-northeast.**

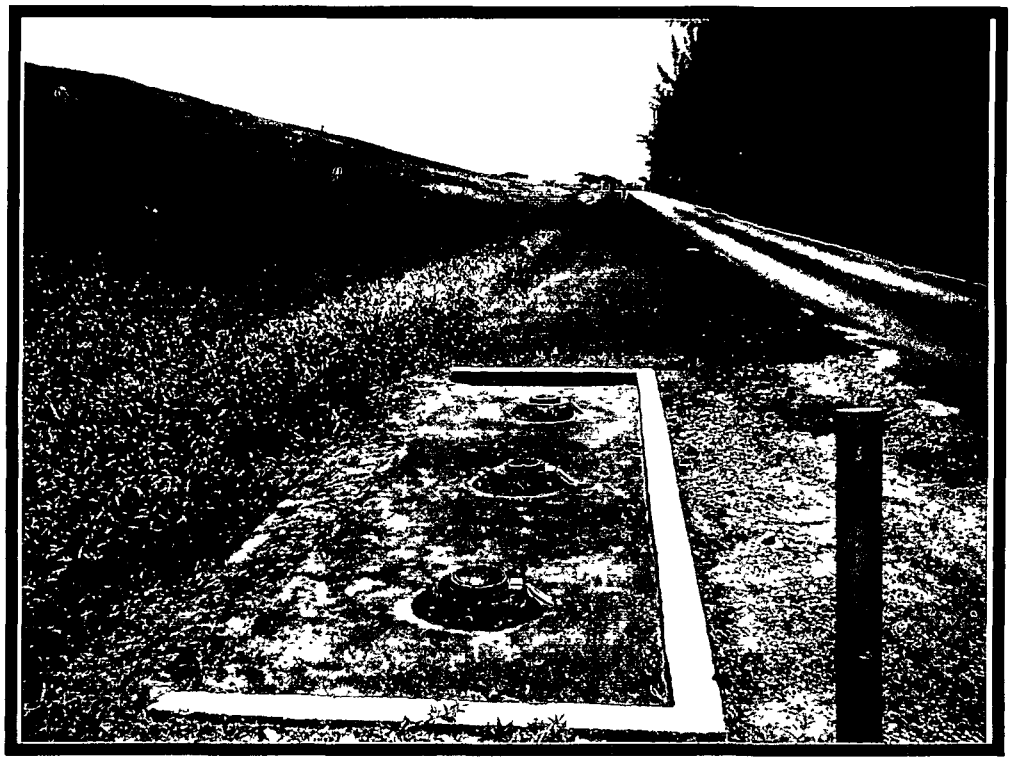


Photo 11	View of typical groundwater monitoring well cluster. This cluster (MW #3) is located north of the sanitary landfill.

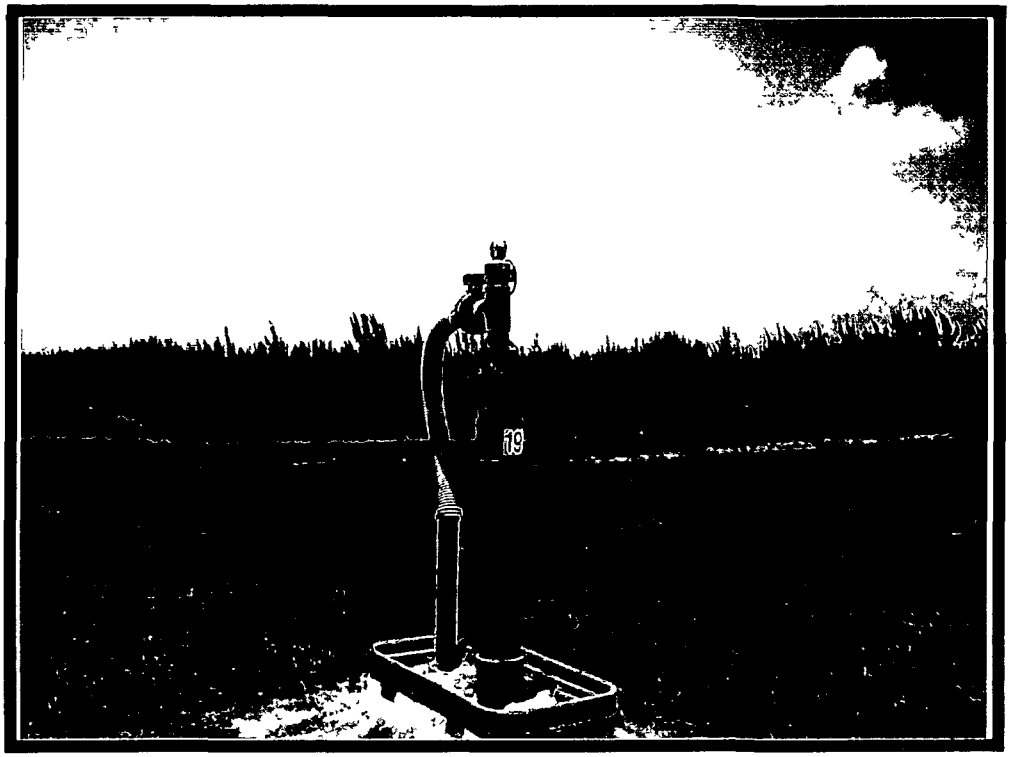


Photo 12	View of typical gas extraction well. This well (GEW-19) is located on top of the sanitary landfill.

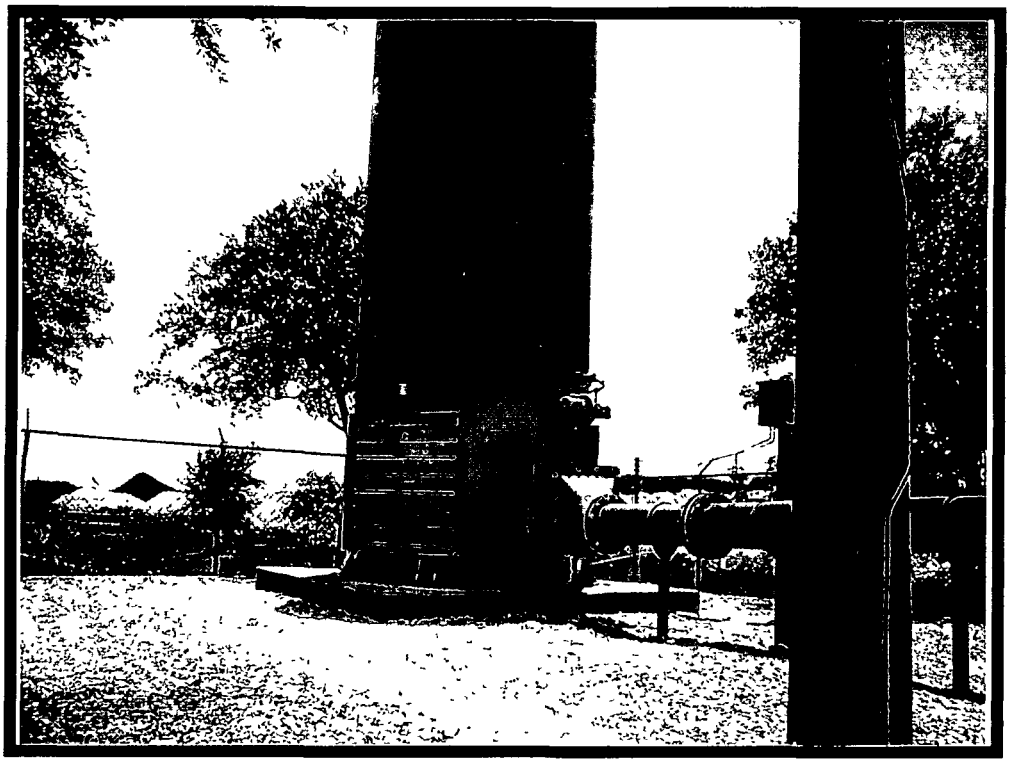


Photo 13	**View of the enclosed flare associated with the gas collection and control system for the sanitary landfill.**

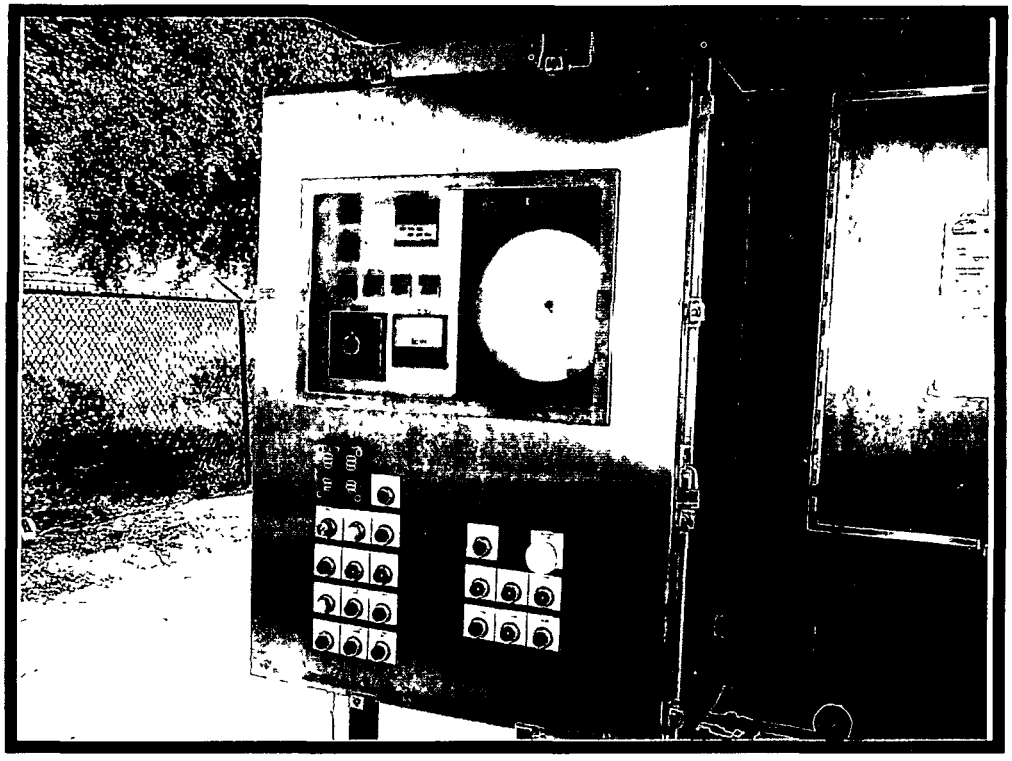


Photo 14	**View of the control panel associated with gas collection and control system.**

Photo 15	**View of the picnic shelter and restrooms located south of the nature pond – facing northeast.**

Photo 16	**View of the picnic shelter north of the nature pond – facing south-southwest.**

Photo 17	**View of a pathway located immediately west of borrow pit #1 – facing south.**

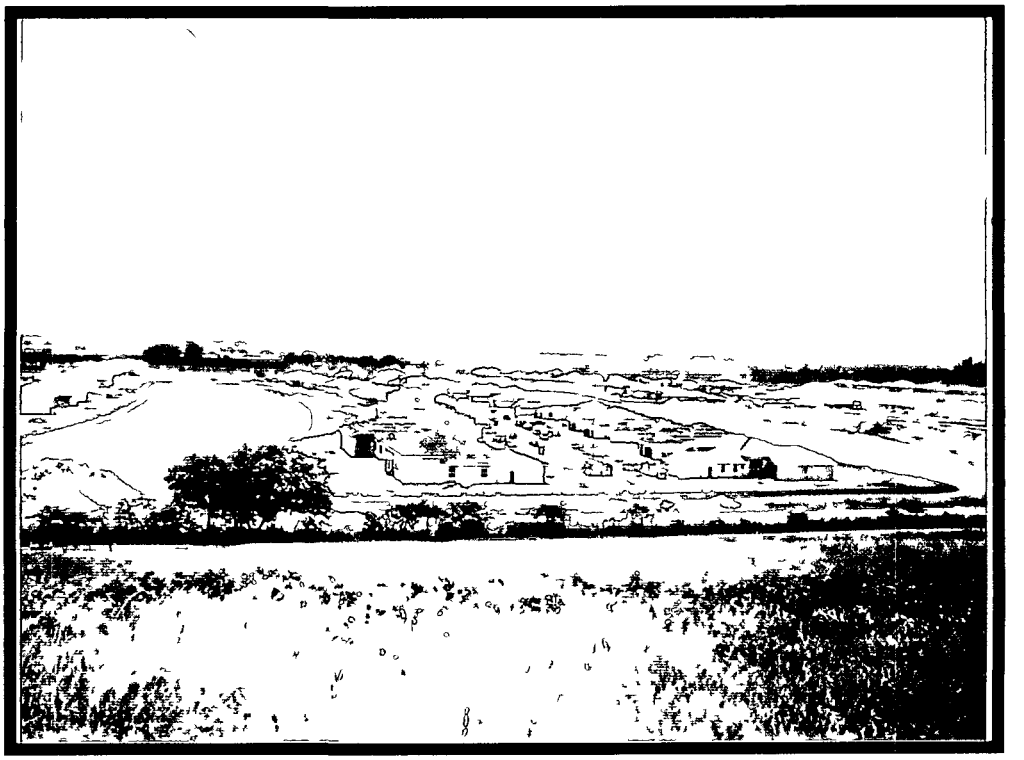


Photo 18	**View from the top of the sanitary landfill overlooking the Riverstone residences – facing west.**

APPENDIX H

Summary of Groundwater Analytical Data –
Contaminants of Concern (Vinyl Chloride and Antimony)
(May 2000 through September 2003)

APPENDIX H

Summary of Groundwater Analytical Data - Contaminants of Concern (Vinyl Chloride and Antimony) - May 2000 through September 2003

Well Designation			MW-3-38	MW-3-58	MW-3-110	MW-7-37	MW-7-59	MW-7-84	MW-8-35	MW-8-59	MW-8-72	MW-9 36	MW-9-59	MW 9-93	MW-11-31	MW-11-57	MW-11-75	MW-11-100	MW 21-35	MW-21-62	MW-21-85	MW-22-34	MW-22-60	MW-22-91
Parameter/Date of Sampling Event	**Units**	**MCL**																						
May-00																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	**7 59**	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Sep-00																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Apr-01																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Sep-01																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Apr-02																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Sep-02																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Apr-03																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0
Sep-03																								
Vinyl chloride	µg/l	1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Antimony	µg/l	6	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0	<5 0

Notes
Bold concentration indicates exceedence of performance standard
MCL - Maximum Contaminant Limit
µg/l - micrograms per liter